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ABSTRACT

Seven separate reports survey the literature and current thinking in the following topic areas: optimum school and class sizes, organization of schools into appropriate grade-level groups, the benefits and disadvantages of ability grouping, the decline in student achievement as measured by standardized tests, the expansion of kindergarten programs, and the relationship between grade retention or repetition and academic improvement. All seven reports explore arguments on both sides of the questions discussed and offer substantial references to the points of view and research findings presented. (PGD)

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ISSUES IN EDUCATION

A Documented Look At Seven Current Topics

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SCHOOL SIZE AND ITS EFFECTS ON ACHIEVEMENT AND OTHER EDUCATIONAL ISSUES

EA 010 801

SCHOOL SIZE

Is bigger really better, or do good things come in small packages? For decades educators have debated the worth of these statements as they relate to the size of American schools. Arguments have been put forth in favor of larger and smaller school populations. Proponents of the former viewpoint note that bigger schools permit greater diversity of staff and curriculum; allow students a greater range of social contacts; and maintain larger financial bases than their smaller counterparts. Those who favor small schools argue that such institutions promote closer working relationships among students and teachers; allow teachers to assume administrative responsibilities; and contain a more cohesive atmosphere than do larger ones.[1]

Many of the positions which have emerged on this important issue have often been based on intuitive speculation. Yet questions concerning the size of American elementary, junior high, and senior high schools have also drawn the attention of researchers.

The positions which have emerged concerning the size of American elementary, junior high, and senior high schools are many and varied. Obviously, there are no easy answers to the questions involved. Yet many of the arguments which have been put forth have been the product of intuitive speculation rather than of empirical research. Any viable approach to the topic of school size must not only theorize but also test its theories against objective conditions.

Research approaches to the topic of school size have varied widely. From the earliest work on the topic, many individuals have attempted to discover ideal sizes for American educational institutions. A variety of factors have formed the bases for this research. Working from an economic point of view, S. P. Nannirga in 1931 deduced that the lowest per pupil expenditures could be attained if senior high school populations numbered between 500 and 1000 students.[2] In a 1954 study of emotional attitudes, Robert Mac Vittie found that the best psychological impact of school environments on individual children would result if elementary pupil populations numbered between 300 and 400.[3] Examining a number of institutional patterns, Clifford Smith found, in a 1960 analysis of Ohio

high schools, that schools containing between 800 and 1200 pupils would provide maximum educational opportunity, staff qualifications, and special services.[4]

The search for ideal school sizes still has its proponents. During the 1960's, however, a number of educators reflected this approach. Terming the belief in ideal size levels 'inflexible', the National Association of Elementary School Principals in 1966 called for a more individualized approach to school population levels.[5] Increased interest in specific institutional research efforts paralleled the Association's action. In a 1966 study of schools throughout the South, Joe L. Jackson established a sliding scale of sizes for institutions including various combinations of grade levels.[6] A survey by Ralph Purdy, also conducted in 1966, focused on the numbers of students contained in grade 12 in Ohio high schools.[7] Larger systems, like the Atlanta Public Schools, conducted their own research efforts on the topic of school size.[8] The reaction against ideal sizes also included a number of studies which did not define any population levels. In their 1970 national survey of elementary schools, Raymond S. Adams, Richard M. Kimble, and Marjorie Marlin concluded that the amount of variation in teaching styles and organizational levels attributable to school size was slight or nonexistent.[9]

At present, the pendulum of opinion concerning school size seems to be somewhere between the ideal numbers and the revisionist approaches. Researchers of the 70's have revived interest in preferred population numbers without recommending ideal sizes. Some, such as Claude Turner and James Thrasher, have suggested extremely wide population ranges (500-1000) in order to accommodate a large number of alternatives.[10] Others, such as Neal Rosenberg, have put forth vague optimum figures for the sizes of schools.[11] The synthesis approach seems to have preserved the quantitative aspect of school size research without attaching any inordinate significance to the numbers themselves.

Methodology of Research

The range of research on the subject of school size has included three basic general types of studies.

1. Opinion Surveys

Types of opinion surveys range from treatments of the views of single individuals to questionnaires covering thousands of people. A prime example of the former variety is a 1953 essay by Englehardt, Englehardt, and Leggett describing the professional opinions of Dr. Gordon McKenzie of Columbia University concerning optimum sizes for elementary schools.[12]

Questionnaire studies covering large populations are often more preferable than the opinions of single individuals, yet their quality varies widely. If the entire subject population has not been contacted, random sampling is a must. In either case, after the initial responses have been received by the experimenter, follow up contacts are necessary so that responses can be obtained from the entire sample. Generalization is a crucial factor in questionnaire surveys. Researchers are sometimes quick to assume that the characteristics of their samples are those of the respective populations.

Survey research on the subject of school size has been carried out by individuals ranging from students to experienced professionals. The results of these efforts are often of uneven value.

2. Reviews of Literature

Surveys of existing literature are actually a variety of opinion research. In summarizing the results of first hand studies of school size, these efforts represent more comprehensive, yet less direct approaches to the topic. The quantity of this type of research has not nearly approached that of opinion surveys. Yet the few reviews of literature which do exist on the subject appear to be of high quality. A sizable percentage of these surveys, such as those by Hubbard (1959) and the National Commission on School District Reorganization (1948) are not of recent vintage.[13] Others, such as that of of the Educational Research Service (1971) do not probe far into the structure or the content of the various specific studies.[14] Given the considerable

amount of questionnaire research which already exists, the review of literature would seem to be one tool whose use might be further developed.

3. Statistical Research

Like reviews of existing literature, statistical treatments concerning school size have not been produced in significant numbers. This type of research seems to divide naturally into what might be called statistical compilations and statistical analyses.

Statistical compilations are collections and breakdowns of data concerning school size. Usually produced by governmental agencies and private research organizations, these large efforts often serve as starting points for more specific survey and statistical research. Compilations of prime importance include the Statistics of Local Public School Systems--Schools, Pupils, and Staff, Fall 1968, assembled by the United States Department of Health, Education, and Welfare, and the various listings of the National Education Association.

Statistical analyses relating to school size do not proliferate, although much of the existing survey data on the subject would seem to lend itself to such treatment. Much of the research in this area, such as that conducted by Hoyt (1959), yielded results which lacked statistical significance. Unfortunately, this pattern has probably contributed to the paucity of available analyses.[15] The fact that such treatments hinge on quantitative factors while viable interpretations depend largely on the judgment of the experimenter, may have discouraged survey researchers from further processing their data.

Educational Factors Studied

Most research concerning the size of American schools has focused on the relationship between that variable and other factors. Because the range of these factors is often a considerable one, they have been grouped, for convenience sake, into four general categories.

1. Academic Factors

Most existing research has concentrated on the connection, or lack of it, between school size and such academic factors as pupil achievement,

success in subsequent education, and range of curriculum offerings.

Early investigations concerning pupil achievement in elementary schools failed to establish any ideal sizes for these institutions. A 1954 survey of Iowa elementary schools conducted by W. Theophilus made no specific recommendations, but did establish that achievement seemed to increase with institutional size.[16] A 1964 study of schools in Hamilton County (Cincinnati) Ohio found little or no relationship between achievement and school size.[17] Later efforts seemed to point out the value of larger elementary schools. A 1972 questionnaire mailed to parents in an Oregon school district defined 400-600 pupils as the preferred size for such institutions.[18] A subsequent study of elementary schools in Montgomery County, Maryland fixed 300 pupils as the absolute minimum size for an effective academic program.[19] The Montgomery study seems especially important, since it was based on an actual experiment with subsequent statistical analyses. A more recent study, (1974) conducted at the national level by the American Federation of Teachers, established 500 pupils as the optimum size and 800 pupils as the maximum size for elementary schools.[20] The latter study investigated academic factors, as well as a number of other considerations. A 1975 study of Philadelphia schools found pupil learning to be higher in smaller elementary schools.[21]

Available studies concerning junior high schools seem indefinite in their conclusions. In a 1961 survey of Southern California junior high schools, G. B. Garcia deduced that school populations numbering between 1,000 and 1300 would be most conducive to high pupil achievement.[22] In their 1962 examination of seventh and eighth grade populations in two eastern Kentucky mining districts, Street, Powell, and Hamblen found 300 to be a minimum size for small, rural junior high schools.[23] The Philadelphia study mentioned above revealed that school size was inconsequential at the junior high school level.[24]

Conclusions concerning the size of senior high schools have varied widely. In their 1958 examination of the achievement of Kansas high school students, Anderson, Page, and Smith concluded that school size did not significantly influence academic achievement.[25] In a subsequent (1961) examination of Iowa high schools, Ralph Jantze concluded that scholastic achievement was highest at institutions with populations between 400 and 800.[26] In studies of high schools in small (2500-25,000) towns and in a wide range of communities, Flanagan (1962) and Kiesling (1968) concluded that institutional size was unrelated to student achievement levels.[27] A 1969 survey of Minnesota public schools showed that students at larger schools had higher achievement than students at smaller schools, although the students at the latter institutions also had fathers with higher educational attainments.[28] The Philadelphia study, mentioned above, noted that pupil learning, and especially pupil learning among blacks, was higher in smaller senior high schools.[29] One of the most comprehensive comparisons of pupil achievement and school size was carried out by James B. Conant during the 1950's. Although not of recent vintage, the survey contained evaluations of pupil achievement in a number of subject areas. Conant found that achievement in mathematics, sciences, and languages were considerably higher at larger institutions. Based on these conclusions, he recommended the elimination of the smaller schools.[30]

The various studies which related pupil achievement to school size produced no definitive ideal dimensions for American elementary, junior high, and senior high schools. In general, however, they did seem to indicate that significant achievement would take place in larger institutions. There were exceptions to the pattern, most notably in the study involving black and other urban students in the Philadelphia school system. Reasonable upper limits for school populations are also assumed to exist. Yet, at the same time, available research suggests that larger institutions at the elementary, junior high, and senior high levels are conducive to higher levels of pupil achievement than their smaller counterparts.

The relationships between other academic factors and school size have also been examined by researchers. Little relationship has been found to exist between the size of educational institutions and subsequent pupil success or failure. In a 1958 study of dropouts from the University of Arkansas, more of the dropouts were found to be graduates of small high schools. Yet this difference disappeared when the data were adjusted to compensate for differences in mental ability.[31] A similar study, conducted in 1959 at Kansas State College also ruled out school size as a significant factor in educational success or failure at post secondary levels.[32]

Definitive relationships were found to exist between another important academic factor, range of curriculum offerings and school size. This was certainly one case where larger schools produced better results. An important year round feasibility study conducted by the Florida State Department of Education in 1957 established that the greatest breadth and quality of elementary curricula could be attained in schools with minimum enrollments of 720.[33] G. B. Garcia's 1961 survey of Southern California junior high schools revealed that 1,000 was the minimum pupil population necessary for a satisfactory curriculum.[34] Studies conducted at the high school level reinforced these conclusions. James B. Conant's extensive analyses of senior high schools are probably some of the strongest arguments for the point that smaller institutions cannot provide significantly broad curricula. Conant noted that the academically-talented student was especially handicapped by the limited range of small school curricula.[35] Other studies, such as those of Woods (1957), Morris (1964), and Turner and Thrasher (1970) reinforced Conant's conclusions.[36]

2. Economic Factors

Overlap between economic and other factors was, admittedly, inevitable. Such academic factors as curriculum offerings, for instance, are based on levels of school district expenditures. Separation of such subjects through definition becomes a tedious and often futile process. It was therefore decided to confine most of the treatment of economic factors to per-pupil expenditures, the general consideration which formed the center of most available research on the subject.

Available research concerning the optimum size for elementary schools has produced suggested sizes ranging from a few hundred to almost a thousand. In a survey of Ohio principals conducted in 1962, Ralph Sollars concluded that costs could be minimized if pupil populations were kept between 300 and 500.[37] A similar study, undertaken in Georgia by the George Peabody College for Teachers, suggested 500-700 as the ideal economic range.[38]

Research concerning school size and economic factors in junior high schools was noticeably lacking. Studies concerning senior high school situations exist in considerable numbers, however. Substantial agreement seems to exist that high schools in the 1000 plus population range will produce the lowest per pupil expenditures. Considerable evidence also suggests that 2000 may increasingly be an optimum level for such institutions.

Some experimenters, including Nanninga (1931) and McLure (1948) have admitted the economic desirability of high schools with populations as low as 500, yet most of these studies were carried out decades ago, when national, as well as educational populations were lower.[39] In a 1966 survey of Wisconsin high schools, John Riew recommended 1,600 as an optimum economic size.[40] A subsequent study of California secondary schools, conducted by Neal Rosenberg, suggested that 2,000 might be the best size for senior high schools.[41] A 1972 examination of Illinois high schools used the cost of each course offered as an economic criterion. This study produced 800-850 as the minimum number of students for vocational high schools and 750-850 as the minimum for general institutions.[42]

As in the case of academic factors, a number of optimum sizes have been suggested. Yet the economic area does seem to be one place where the 'bigger equals better' adage has a basis in research.

3. Institutional Factors

A number of factors, including interpersonal staff relationships, organizational conditions, staff development, and management patterns might be grouped together under the heading of institutional considerations.

Existing surveys undertaken in elementary schools have established varying conclusions. A poll of elementary principals conducted in 1961 by the National Education Association's Research Division produced 421 pupils as the

median size most preferred. The principals based their conclusions on sizes most needed for effective instruction, supervision, and administration.[43] Sollars' 1962 study of Ohio elementary schools delineated 300-499 as the most desirable school size from the standpoint of institutional and academic factors.[44] A 1968 national study carried out by Robert Whitt focused on the most workable sizes for elementary schools from the viewpoint of effective business management. Whitt suggested 300-500 as an acceptable minimum and 900 as acceptable maximum size such institutions.[45] A recent national survey of the attitudes of elementary school teachers made no recommendation regarding school size. After considering such factors as the organizational level of educational institutions, the experimenters concluded that the amount of variation explainable by school size was slight.[46]

Research concerning school size and institutional factors at the junior high school level does not proliferate. The national study mentioned above made no recommendations concerning the size of these schools. Robert Whitt recommended a minimum of 100 in grade 9, and a minimum of 300-500 in grades 7-9.[47] A 1967 essay by N. L. Englehardt and James Boyd suggested 600 as the minimum junior high school size necessary for an effective staff and instructional program.[48]

In the senior high school setting, studies concerning the relationship between school size and institutional factors have produced a considerable variety of conclusions. Surveys of high schools in Arkansas and North Carolina undertaken by Collingsworth (1961) and Weaver (1961) established 400-500 as minimum population levels necessary to attract staff members with acceptable qualifications.[49] The subsequent advent of a surplus of qualified staff members has lessened fears concerning the recruitment of staff members. Surveys undertaken during the mid-1960's in the larger states have established higher minimum populations for senior high schools. A 1965 examination of teacher-pupil relationships in Los Angeles high schools placed 2,000 as the maximum recommended high school population.[50] A comprehensive survey of Michigan secondary schools conducted by Schloerke (1965) fixed 1,500-1,999 as the most desirable high school population range.[51]

More recent studies concerning school size and institutional factors have contained fewer efforts to define precise population levels. A 1968 survey of Iowa high schools made no recommendation on the subject. Robert Whitt's 1968 research suggested 450-1,800 as an acceptable range.[52] Yet Whitt's range was so wide as to eliminate only the smallest and largest high school sizes.

Conclusions of research concerning school size and institutional factors vary. It seems to be generally acknowledged that close staff-pupil relationships can be developed in smaller institutions. At the same time, however, it also has been found that the building of such relationships is possible in larger schools. At the same time, the larger schools seem to better facilitate the development of well-qualified staffs and well-defined organizational patterns. Clearly, the most qualified staff members will often be attracted to the larger institutions with their well-developed programs.

4. Psychological and Environmental Factors

This area has not as yet become the subject of significant amounts of research. The realization that such patterns as pupil achievement and success or failure in subsequent education might be the result of emotional or environmental influences achieved acceptance only slowly, and research in the area has also been delayed.

Robert MacVittie's 1954 survey of elementary schools pointed up the need for smaller institutions with maximum populations in the 300-400 range.[53] Yet MacVittie's work has unfortunately not been followed by more similar research in elementary schools.

Examinations of the relationship between school size and psychological and environmental factors at the junior high school level are almost non-existent. No analyses which focus exclusively on the topic are available. Those treatments which do occur are impossible to separate from the more general studies which they comprise.

Even at the senior high school level there are but a few examinations of the relationship between school size and psychological and emotional factors. In a 1953 examination of the relationship between dropout rates and the size of Illinois high schools, Maurice Hartung found no recognizable pattern.[54]

Writing in Big School, Small School in 1962, Barker and Grump argued that the best approaches to the subject should focus on the organization of schools as well as the raw population numbers involved. They point out that increased participation of students within the school society should be the crucial element. They noted that increased participation was easier to attain in the smaller institutions, but not impossible in the larger ones. Barker and Grump argued that increasing school size was a generally ineffective means of achieving richness and variety. They claimed that all sizes of institutions could be infused with greater richness. The extent to which this process succeeded, they pointed out, would determine the psychological and environmental health of student populations.[55]

Other researchers concluded that smaller high schools were more conducive to participating, emotionally healthy student populations. Writing in 1970, Turner and Thrasher argued that students from smaller institutions showed greater responsibility and self direction.[56] McPartland and McDill, in 1975, claimed that the smaller student teacher ratios which characterized institutions of lesser size cut down on crime and encouraged the development of more coherent student populations. They added that the increased integration of students into the life of the institution which takes place in smaller institutions provides more rewarding educational experiences for individual students.[57]

The clear weight of research evidence concerning psychological and environmental factors and school size seems to favor the smaller institution. However the point made by Barker and Grump seems to be an important one. Perhaps too much emphasis has been placed on the raw numbers involved. In the case of psychological and environmental factors, the structure of the school setting may have more influence than the numbers which delineate the size of the institution.

The General Picture

The interaction between school size and a variety of factors has been examined here. Perhaps the general results are best summarized by the Washington State Temporary Special Levy Study Commission, which concluded that there is no special relationship between school size and quality, though it is generally agreed that very small schools cannot compete favorably with larger schools.[58]

Merely to state a preference for larger institutions, however, is to ignore the fact that the population of elementary, junior high, and senior high schools often vary. Despite the obvious disadvantages or numbers, some sort of quantitative definition in these areas definitely seems necessary.

1. Elementary Schools

The general range of research on the subject of school size at the elementary level seems to focus on 300-800 students as an ideal population level. Few important studies recommend elementary pupil population levels below 300 students. The noteworthy survey conducted in the Montgomery County Maryland schools fixed that figure as an absolute minimum level for effective student achievement. Research on the topic of academic curricula tended to recommend minimum student populations in excess of the 300 level. Research dealing with economic factors focused on 500 as a minimum level for effective economic operation. Institutional factors seemed best suited to institutions with populations in the same range. Psychological influences of school size were seen as most beneficial when pupil populations were no lower than 300.

Acceptable maximum levels for elementary school populations ranged from close to 500 to almost 1,000. As in the case of the minimum levels, researchers dealing with economic and institutional factors tended to recommend higher figures than those dealing with academic, psychological and environmental factors. A number of studies did recommend maximum school sizes in excess of 800 pupils, yet the weight of academic and psychological arguments did seem to weigh in favor of such a lower figure.

2. Junior High Schools

Research at the junior high school level produced a number of conclusions, all of which were difficult to reconcile into a reasonably coherent range. The bulk of the evidence based on academic and economic figures recommended school sizes in the 1,000 range, yet a study by Whitt suggested an acceptable minimum population in the 500 range. The sizable differences between these recommendations should be considered along with the fact that few studies comparing school size to any of the factors exist in this area. Research concerning school size and economic and psychological factors is almost totally absent. Although some extrapolation of research from the elementary and senior high areas might be in order here, it should be remembered that few definitive conclusions can be drawn from existing studies.

3. Senior High Schools

Most of the available research concerned senior high schools, but the range of recommended sizes was indeed considerable. As was the case in the elementary area, research concerning academic and psychological-environmental factors tended to recommend lower enrollment levels than did research relating to economic and institutional factors. Suggested minimum and maximum enrollment levels ranged from lows in the 500 region suggested by Ralph Jantze to highs in the 2,000 range. Of prime importance were the studies of academic achievement conducted by James B. Conant. These established that the small high schools actually worked to the detriment of scholastic levels of pupils, and especially the higher achieving pupils. Conant's work also established that the larger institutions had curricula far in advance of the smaller ones.

Research concerning economic and institutional factors generally reinforced the 500 figure as a lower limit for the size of senior high schools. Even surveys undertaken in the rural systems of southern states strongly recommended the 400-500 region as an absolute minimum for school size. Research undertaken in the economic area strongly suggested the 1500-2000 range as an optimum region for senior high school size. Data concerning psychological and environmental factors was noticeably lacking, although

various authorities in the area did caution against the overly establishment of large high schools.

SUMMARY AND CONCLUSIONS

The changing approaches to the topic of school size were reviewed. It was noted that early attempts to find ideal school sizes fell under attack by researchers who either emphasized the uniqueness of every school situation or rejected quantitative approaches to the problem. It was emphasized that present efforts in the area generally feature a synthesis of the two approaches.[59]

The methodology of research was then surveyed. The various aspects of opinion surveys, reviews of literature, and statistical studies were discussed.

The relationships between school size and a number of educational factors were treated. The preponderance of research evidence indicated that larger institutions were often more desirable. The conclusions relating to academic factors were mixed. Curricula were far more varied at larger schools. Pupil achievement was generally found to be higher at such institutions. Economic and institutional factors also seemed to favor the development of larger institutions. Psychological and environmental factors supported the development of smaller institutions. Available studies indicated that coherence and order weakened as institutional size increased.[60]

Although the weight of existing research favored larger institutions, it does seem important that efforts be made to compensate for psychological and emotional factors in such schools.

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ORGANIZATION OF SCHOOLS:
AN OVERVIEW OF ALTERNATIVE GRADE LEVEL ARRANGEMENTS

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ORGANIZATION OF SCHOOLS

Centuries ago, a school center usually consisted of a single room and one teacher who provided elementary level instruction for anywhere from ten to twenty-five or more pupils. In this simple organizational pattern, the teacher provided non-graded education for all of the pupils and offered individual help as time warranted. The only formal groupings within the school were for the orientation of beginners. While sometimes chaotic in operation and based in rural life, the system accepted all children regardless of social and economic status and thus served the needs of developing, democratic society.[1]

Due to increases in student population and secondary level education, one-room school houses were consolidated into larger districts. With this change, various school structures appeared. Organization of students was necessary with larger schools because individualization was no longer possible. However, at that time, no standard guidelines existed for grouping students for instruction.[2]

Early attempts to group pupils within schools proceeded along various lines. By 1810, the Providence, Rhode Island school system had established grade levels within the primary, intermediate, and grammar classifications.[3] The actual beginning of the graded school as we know it is often credited to John D. Philbrick of the Quincy Grammar School in Boston. Philbrick's school began operating with such levels in 1848.[4]

During the nineteenth century, the Prussian system of graded schools achieved wide appeal. Pupils were classified according to age levels and educational attainment. Each class studied the same subjects at the same time. In 1843, Horace Mann reported to the Massachusetts State Board of Education that the Prussian Classification System of eight grade levels was in

use throughout the state. Several types of instruction had been instituted, and a single teacher bore responsibility for each class.[5] The introduction of the Prussian system thus ushered in the self-contained classroom, with its own teacher, pupils, and routine, as well as the advent of graded levels.[6]

With the standardization of graded education during the late nineteenth century, the number of levels became fixed at thirteen. The first level, kindergarten, retained its original German designation, while the numbering began with the second and proceeded to the thirteenth level.

The organization of American education, from an early stage in its development, thus focused on separate levels. While there have since been changes in the concept, not the least of which has been the non-graded movement of recent years,[8] grading seems to remain the guiding maxim in the organization of primary and secondary schools. Primary discussion and debate have focused on intermediate levels of instructional organization, the groupings into which grades themselves are to be collected.

Terms such as primary, intermediate, and grammar schools appeared on the American scene shortly after the birth of the Republic, during the early years of the nineteenth century.

As the national population changed and developed, so did patterns of educational organization. During the nineteenth century the number of people increased, yet westward expansion prevented the accumulation of excessive numbers in too many areas. As a result the K-12 structure was established in widely separated locations and retained without division. Since further dispersion and little overpopulation resulted from population growth, capacities of public schools did not usually increase to a point where wholesale partition of the K-12 structure was deemed necessary. The twentieth century changed all that. With the geographic limits of the nation fixed, large numbers of people accumulated in urban and suburban areas. The resulting growth of

school populations necessitated division of the unified, K-12 structures into more manageable units.

In the 1970's, the dramatic growth of population which had characterized the previous 150 years slowed dramatically. As national population levels stabilized, school populations declined. In some places, the drop was more marked than in others, yet the trend appeared to be general. The new pattern necessitated a move toward consolidation of grade levels and facilities first in elementary education, then in the other two levels.[9]

Because general discussion of the full range of these groupings is cumbersome and often confusing, treatments undertaken below will proceed on an individual basis. Elementary schools will be discussed first, with middle and senior high schools following.

Organization Levels in Elementary Education

In one sense, all of American public education grew out of elementary schools, since the one room schoolhouse was fundamentally an elementary institution. By 1818, separate primary schools with four grade levels were functioning in Boston for pupils aged four to seven. The four classes represented groups of increasing proficiency in reading and spelling.[10] With the development of the Prussian system from an original nine into thirteen grades, interest in primary education came to focus on the first nine levels (including kindergarten), with the remaining four being left to secondary education. The result was the traditional Eight-Four plan.[11]

A heavy burden was placed on primary education by the Eight-Four plan. The Elementary section of this system developed out of the first nine levels of the Prussian system of organization. Under the Prussian concept, a child's schooling began at age six and ended at age fourteen, when he was considered old enough to begin earning a living.[12] Therefore, in the initial levels, pupils were expected to acquire proficiencies in basic languages and mathematics

along with introductions to geography, history, and science. The burden on the elementary levels of the American system was made heavier by the changing sizes of student populations. Initially, many students did nct continue their educations past the eighth grade. Sizable numbers would quit at or between any of the various levels. Secondary school populations were usually the committed, homogeneous remainder. Education for all this really came to mean primary education for all.[13]

Variations quickly developed on the Eight-Four Plan, yet this traditional model of American school organization has survived in many places. It continues to flourish in rural areas, where a more conservative approach to education holds sway; and in states where separate administrative units for elementary education exist. The Plan has also found support from psychologists who believe that thirteen and fourteen year old children do not mature as rapidly as most psychologists contend. Other proponents have argued from a sociological standpoint, that the seventh grader is too young to be influenced by the maturity level of ninth grade students.[14]

All of the alternatives which have been developed into the Eight-Four plan have restricted the range of elementary education. An early variant separated grades seven and eight from the first six. Supporters of this approach argued that thirteen and fourteen year old students are in a period of development where a more varied program, including fewer repetitious subjects should be provided. In the early decades of the twentieth century it was also believed that more students would continue in school for longer periods if a break in organization came at some point other than age fourteen, the point traditionally regarded as the end of schooling by large segments of the adult population.[15]

The initial movement to remove grades seven and eight from elementary school organizations was thus largely based on hazy notions of human motivation as well as practical ideas. Later work in the field of child development added greater impetus to this pattern.

The elementary segment of the Eight-Four plan, like its Prussian counterpart, had focused on the schooling of the individual for adult life. It had been adopted for use in America, although conditions in the United States bore little resemblance to those in Central Europe. During the early twentieth century, child development studies gradually shifted the focus of elementary education from the total schooling of the individual to the instruction of children. Within this context, individuals who had reached puberty were no longer children and were thus removed from childrens' education. The close of elementary education was accordingly moved from the eighth to the sixth grade levels.[16] The impact of the new interest in child development dramatically changed the organization of elementary education. Indeed, it may have created elementary education as we know it today. In areas where the K-6 approach took hold, primary education shifted from the inculcation of the individual with all of the skills necessary for life, to concern with total child development. The accent on instruction in basic subject areas remained, yet with it came a concern for the child as a special type of individual, one with emotional and mental needs which set it apart from the general population.[17] A number of criticisms have been leveled at organizations including K-6 elementary schools. Yet most of these comments have focused on the junior high, rather than the primary institutions.[18]

The division of the K-8 elementary school has continued beyond the move to K-6 setups. One popular variant is the K-3 plan, involving the building of several such schools in various neighborhoods, to provide only primary experiences for the youngest children. After grade three, the pupils are transferred to larger, intermediate schools for levels four through six. This particular type of structure can be less expensive, since larger facilities which young children do not necessarily need, such as cafeterias, gymnasiums and auditoriums need not be duplicated in each primary building, but may be located in the larger, intermediate school.[19]

Another organizational alternative places a preschool year with grades K-2 in one building and a second four year block, including grades 3-5, in another. This structure provides maximum concentration on the needs of the very youngest children within the context of individual neighborhoods. The second level schools can be somewhat farther removed from the home and serves larger geographical areas.[20]

The K-2, 3-5 system also provides economic and institutional advantages. Duplication of expensive facilities is minimized through the inclusion of small numbers of closely associated grades in single buildings. Expert staff members can also be attracted and effectively utilized in such specialized institutions.[21]

Another important factor favoring the K-2, 3-5 setup was the decline in school populations which began to make itself felt in the 1970's. The stabilization of national population levels stimulated a widespread decrease in numbers of elementary pupils. The trend necessitated consolidation of grade levels and facilities at the elementary level and made more urgent the implementation of plans such as the K-2, 3-5 setup.[22]

At the extreme end of the elementary organizational continuum there remains the ungraded school, a plan which provides for pupil progress through various achievement groups, rather than from grade to grade. The problems associated with this approach appear to be numerous. Retention rates are unknown. A student could conceivably spend from five to ten years in school before entering seventh grade. This type of institution is still in its infancy, and must be considered experimental rather than practical.[23]

There are numerous other patterns in elementary school organizations. Of special importance in recent years has been the growth of kindergarten and pre-school levels. Always a part of the German system, kindergarten caught on quickly in American urban areas, but more slowly in the countryside. The period since 1940 has seen the acceleration of this level to rural areas. The advent of the 1960's witnessed a rapid growth of pre-school education in

urban and suburban locations. A subsequent rise of pre-school education in the rest of the nation would not seem far off.[24]

The pluralistic nature of American education has encouraged the development of varied forms of elementary school organization. Studies have shown that each of a number of varieties of educational structure have received considerable support. In 1960, almost one fourth of all elementary schools (23.9%) included grade levels K-8, while almost two thirds (65%) included grade levels K-6. The latter approach, with all of its proponents, appeared to have gained the acceptance of most of the population, although the K-8 plan still held the allegiance of a sizable minority. At the time of the survey, other variations such as the K-3 and K-2 structures prevailed in less than 8% of the Nation's school districts.[25]

The years since 1960 have since changed the organizational patterns of elementary schools. Statistics now show that programs such as the K-3 and K-2 approaches are gaining acceptance. By 1975, the percentage of all schools using such organizations had surpassed 12%. (It should be remembered, however, that the mathematics involved here can overrate the significance of these statistics, since each K-6 school divided will produce at least two of the smaller institutions). The smaller primary school structures seem to have gained largely at the expense of the K-6 plan, since the percentage of schools using the K-8 approach has decreased only slightly during the intervening decade.[26] The organization of elementary schools seems to be related to the variety of geographical and sociological settings involved. The K-8 plan, for one reason or another, is apparently well-suited to rural areas.

An important statistical trend in the development of elementary school organization has been the downward extension of primary instruction to include kindergarten and pre-school. Already alluded to above, this trend began with the dramatic extension of kindergarten classes during the 1940's. By 1958,

70.4% of all urban areas maintained public kindergartens. At the same time, however, only 4.5% of urban communities maintained pre-school programs. Rural systems continued to lag in the extension of kindergarten, although, by 1960, over one third of all rural districts supported such classes.[27] By the 1970's, increased interest in pre first grade education had increased enrollments in both types of classes. Almost 90% of all urban areas maintained kindergartens while over 15% subsidized pre-school programs. The proportion of rural communities maintaining kindergartens had grown more slowly, but did exceed one third.[28]

2. Organization of Middle Schools

Unlike the elementary school, which was part of American education from its very beginnings, the middle school has been a late arrival on the educational scene. Its predecessors were the junior high schools of the early twentieth century. These institutions, alluded to in the above discussion of elementary organization, grew out of a belief that pupils in grades seven and eight had academic and emotional needs which differed from those of younger students. In many ways, the junior high school was designed to facilitate the transition from childhood to adolescence.[29] The institution still has its adherents, although its popularity has greatly lessened.[30]

The middle school emerged from an increasing dissatisfaction with the junior high school. During the mid twentieth century, critics of the latter institution argued that it simply copied the departmentalization, subject-centered curriculum, and sophisticated student activities of the senior high school. They claimed that the junior high school served no distinctive purpose. Some even suggested that grades seven and eight might be amalgamated into the senior high school.[31] In this context the middle school was advanced as an alternative institution which could adequately meet the unique educational,

personal, and social needs of early adolescent pupils.[32]

Proponents of the middle school emphasized the distinctive needs of the early adolescent. They pointed out that most students undergo such important changes as increased independence, increased importance of peer groups, sexual and social maturation, intellectual maturation, and development of values and norms. Middle schools, it was argued, would provide an environment which would allow early adolescents to cope with these changes in an environment which eased the transition from childhood to full adolescence and at the same time protected them from the pressure and success orientation which marked much of American secondary education.[33]

Organizational points lay at the heart of the middle school concept. Proponents of the institution favored a number of innovations which would make it different from the junior and senior high school structure. Increased emphasis would be placed on guidance and human relations programs to supplement the activities of individual teachers. The sophisticated social activities of secondary schools would be deemphasized. Changes such as these would promote the transition to adolescence in an environment relatively free of pressure. A broadened program and faculty, individualized instruction, and exploratory courses would permit students to explore more areas of knowledge and enable them to progress at different rates toward the establishment of identities.[34]

The middle school concept also included such aspects of secondary school organization carry overs as diversity of teacher certification and flexible scheduling. These elements it was judged, would also aid the transition from childhood to adolescence.[35]

In an organizational context, one of the principal points of discussion often became the selection of grade levels to be included in the middle school. Early efforts focused on grades seven and eight, the core of the junior high

school ideal, with the possible addition of grade nine. Such a structure focused on removing the three levels from the domination of the secondary school and building a distinctive middle school environment.[36]

Later approaches increasingly included grade six. Studies by Forbes (1968) and others, indicated that the rate of maturation among children had increased and that sixth graders bore greater emotional resemblance to early adolescents than to their younger counterparts.[37] Other research established that the physical size of students at the sixth grade level had gradually increased over several decades.[38]

On the heels of the 6-9 organizational structure, came the 6-8 plan. In part, the latter configuration was based on the same facts which brought about the 6-9 ideal. The increase in emotional and physical maturation levels worked at both ends of the graded continuum. If sixth grade pupils were slipping into early adolescence, it figured that ninth graders were moving into full adolescence.[39]

It is difficult to date the establishment of the first middle schools. Although one author declared that the first such institution was definitely established in 1950,[40] it seems more reasonable to assume that the concept evolved over a period of decades. The first middle schools probably included the same 7-9 organizational structure as many contemporary high schools. At this early stage in the development of middle schools, the institutions differed from junior high schools only in the emphasis which they placed on instructional and guidance programs.[41] The growth of the middle school concept was gradual. Institutions with 7-9 organizational schemes slowly emerged from K-12, K-8, and 9-12 setups during the first half of the twentieth century. In many cases, 7-9 middle schools grew out of 7-9 junior high schools.[42]

The development of middle schools was apparently greatly accelerated by the evolution of the 6-9 and 6-8 organizational schemes. The advent of these patterns, during the 1950's and 60's closely paralleled a rapid rise in the numbers of middle schools. By 1971, it was estimated that more than 2,000 such institutions had been established, the number having quadrupled between 1965 and 1971.[43]

The development of the middle school continues to the present day. Academic change, like most varieties of that elusive concept, never ceases. Unlike elementary and senior high schools, each of which is well-defined at one end by the "K" and "12" aspects of our K-12 system, the range of middle school organization is subject to ambiguities at both ends of its curriculum. Accordingly, new trends are planned which promise both to extend and restrict the scope of middle school organization.

One such movement involves the reannexation of grade six by primary schools to form part of a K-3, 4-6 system. The birth of such a pattern, proponents say, would allow grades 4-6 to be dealt with as an intermediate grouping for pre-adolescents, rather than early adolescents. Supporters argue that scope of responsibilities being assumed by the present middle school is an excessively broad one, and that the removal of grade six would permit the middle school to better concentrate on the problems of early adolescents.[44] They also point out that further subdivision of grade levels, like that contained in a K-3, 4-6, 7-9 configuration, would save money by further specializing facilities for groups of similar grade levels.[45]

Another grouping currently being implemented would amalgamate grade five with 6-8 to form a four level middle school. Proponents of this structure point out that elementary teachers of grade 5 are not equipped to deal with a full range of subjects. One answer to this problem would be the departmentalization of the entire elementary school. Yet such a move would create the same difficulties in the elementary setting which led to the creation of

the middle school in the first place. The compromise solution seems to be the annexation of another elementary level, grade 5, by the middle school.[46] Supporters of this viewpoint also note that a continuing increase in the maturation of elementary students will naturally move grade 5 into the early adolescent range.[47]

An interesting variant of this approach, from an organizational standpoint, has been the 5-8 middle school organized in a dual structure. In this configuration, the entire middle school is departmentalized, yet pupils in grades 5 and 6 are given considerably less flexibility in scheduling and curriculum design than their counterparts in grades 7 and 8.[48] The 5-8 concept would seem to represent the largest organizational growth of the middle school ideal. This model by incorporating four full years, develops the middle school ideal from one of transition to one of more extended evolution.

At the present time, the history of the American middle school appears to have reached a crossroads. Having evolved from the junior high school, the middle school has grown to incorporate grade 6 and in some cases, relinquish grade 9. The upper limits of middle school organization thus seem rather well defined at the close of grade 8. At the other end of the organizational spectrum, the limits of the institution are more vague than ever, however. One approach would see the middle school expand beyond the absorption of grade six to also include grade 5. Another pattern would erect another mediating institution, the intermediate school, between the middle and elementary schools and restrict the middle school to grades 7-8. More possibilities will likely arise. The middle school concept has apparently evolved from its early growth and is now nearing maturation.

A number of variant middle school organizations have been mentioned in these pages. While it is true that these configurations have developed in an historical evolution, none are necessarily superior to the others. Like

the variations of elementary school structure, they can be employed by different districts to suit a wide range of conditions.

In many areas, the 7-9 pattern is still in use. Proponents argue that the ninth grade is a powerful magnet for competent teachers in such specialized fields as art, science, foreign languages, music, industrial arts, and home economics. They argue that social activities and boy-girl relationships for ninth grade pupils can be maintained at less sophisticated levels, and overly sophisticated expressions readily discouraged within such a context.[49] This structure may be suited to rural areas which have generally maintained traditional patterns of educational organization.

Schools with the 6-8 and 6-9 structures also exist in a number of areas. It has been argued that this configuration is more easily administered than the 7-9 system, since the oldest pupils are eighth rather than ninth graders and the burden of the administration of ninth graders is shifted to the senior high school. It has also been pointed out that this system usually retains students in local neighborhoods to a greater extent than its 7-9 counterpart, thus providing additional time for the inculcation of local values in a community setting.[50]

Considerable support also exists for the 5-8 organizational configuration. Proponents of this structure point out that the break between grades 4 and 5 makes it easy to integrate middle and elementary programs. Opponents argue that the four level span is too large for an intermediate school and that the system preserves the undesirable break between grades eight and nine.[51]

The disposition of grade 9 has been a major problem in middle school organization. For decades educators struggled to place grades eight and nine in the same building to avoid the increased dropout rate caused by changing schools between the two levels. Since it was usually impossible for senior high schools to include grade eight, middle schools, of necessity, absorbed grade nine. The considerable decrease in dropout at this level during recent

years may act to eliminate much of the problem.[52]

Statistics on the distribution of middle schools reveal a continually changing pattern. As late as 1959, the most common type of organization was still the 7-12 junior senior high school. This structure included 42% of all school districts. By the mid 1960's, however, this distribution had changed considerably. In a 1964 national survey, it was found that over 80% of the districts sampled were employing the 7-9 middle school structure while 13% used the 7-8 plan and 4% employed the 6-8 configuration. The 1964 survey revealed the 7-9 organization to be the most stable of all of the patterns. While 34% of the districts utilizing the 7-8 structures and 27% of those employing the 6-8 ones had plans for changing the organization of their middle schools, less than 4% of those using the 7-9 configuration planned to do so.[53]

Yet changes have occurred. By 1975, the proportion of all districts utilizing the intermediate (4-6) school had increased to 12%. This pattern had the effect of reinforcing the percentage of districts using the 7-9 structure and increasing the proportion employing the 7-8 model. The principal victim of the rise of the intermediate school seems to have been the 5-8 and 6-9 patterns, which were apparently squeezed back into the more traditional 7-9 and 7-8 configurations by the newer setups.[54]

The middle school, despite the many organizational changes it has undergone, is still relatively new to American education. Existing research does not support the conclusion that the institution has achieved its full potential; neither does it indicate that the concept is inferior to other, more traditional types of schools. The middle school concept, like the elementary one, has many variant forms. Its organization, like that of the elementary school, must be adapted to fit the particular needs of various communities and programs.[54]

3. Senior High School Organization

Like the elementary school, the American high school has had a comparatively long history. The roots of the present institution lie in the "academies" of the late seventeenth and early eighteenth centuries. Copied from English models, these schools were established to teach reading, writing, arithmetic, bookkeeping, and English grammar to the youth of the Colonies and later, the Republic. The history of the academies was marked by a gradual broadening of curriculum content. An early, religious emphasis gave rise to a study of the classics. During the nineteenth century, practical subjects gradually infiltrated the range of courses taught.[55]

The decades of the nineteenth century witnessed the development of the academies into the primary institutions of secondary education in America. The primary organizational development of the period was the coming of the grading movement to these institutions. The spread of standardized levels through elementary schools began to touch American secondary education during the middle decades of the nineteenth century.[56]

The grading movement was aided by the establishment of public high schools and the progressive conversion of many private academies to public control. This trend helped to combine the academy with the elementary school and pave the way for the eventual triumph of the K-12 organizational structure.[57] The process was a gradual one, yet public secondary education did develop both from popular initiative and from private education. This pattern, when fused with the tradition of the one room schoolhouse, laid the basis for the historical organization of American education.

The years of the later nineteenth century which saw the establishment of the elementary-secondary combination also witnessed the rapid extension

of graded levels to that structure. As has been already noted, this process involved the division of the elementary school into kindergarten and eight other levels and the subsequent extension of those levels into the high school. The familiar K-12 pattern which resulted is probably as much a part of the educational landscape as the elementary-secondary combination itself.[58]

From an organizational standpoint, the twentieth century has become one of definition for the senior high school. It seems paradoxical that the century-long process of elementary-secondary fusion which marked the 1800's should be reversed during the 1900's, yet this was precisely the case. The effect of this trend on school organization was considerable. This new move toward consolidation of grade levels and facilities moved first through elementary education and then into the secondary school.

In many cases partition of the elementary-secondary continuum became a simple move. The division was made between grades eight and nine, reversing the nineteenth century process whereby the two types of elementary and secondary institutions were combined. The resulting K-8, 9-12 structure remains in many areas to the present time. The system seems particularly suited to rural areas, where it continues to proliferate. The structure bore the brunt of the attacks of the middle school movement, and has drawn the support of some psychologists.[59]

The K-8, 9-12 movement reaffirmed the nineteenth century organizational scope of the senior high school. Succeeding trends in turn expanded and restricted that scope. The rise of the junior high school movement in some cases removed grade nine from the high school to form a 6-3-3 structure and in others left it intact in favor of a 6-2-4 pattern. Many proponents of the junior high praised the departmentalization and sophistication of the high school, but argued that these developments adversely affected the ninth grader. Fourteen year-olds, they pointed out, should have more opportunity

to develop their interests in an atmosphere uncluttered by the presence of three levels of older students. Yet agreement among junior high school supporters was not unified on the point. Many pondered which institution should include the ninth grade, then lumped it with grades ten through twelve.[60]

Another twentieth century development in secondary education extended the organizational scope of the high school. The Commission on Reorganization of Secondary Education in 1918 recommended the organization of American education to include elementary schools containing kindergarten and six grades, and junior-senior high schools, which would also include six levels. The junior-senior high school caught on rather slowly but has made considerable progress. The institution does permit the implementation of junior high school programs in areas with populations too low to permit the establishment of separate units. Attention has also been drawn to the fact that the concept permits the implementation of a wide variety of programs. Space can be allocated and reallocated without the need for a change of buildings or a restructuring of transportation routes. Variations on the 7-12 junior senior high school have also been devised. Some districts have even experimented with 8-12 setups.[61]

The advent of the middle school movement initially gave added strength to the 10-12 senior high school. Like many junior high school supporters, middle school proponents believed that the ninth grader was a pre-adolescent whose development would best be served through grouping with other pre-adolescents such as pupils in grades seven and eight. Studies focused on the need for self-expression among pre-adolescents in an atmosphere free of the sophistication of grades 10-12. In recent years, however, research has suggested that grade nine might best be included with the upper three levels after all. Analyses of the development of pupils have emphasized the increasing maturation of the full range of elementary and high school

students. The organizational effect has been to move grade six, and sometimes grade 5 into the middle school, and to move grade nine into the senior high school. The familiar 9-12 secondary school has thus reappeared in the context of K-5, 6-8, 9-12; K-2, 3-5, 6-8, 9-12; K-4, 5-8, 9-12, and other systems.[62]

Until recently, discussions on high school organization have focused almost exclusively on the lower end of the grade continuum. Principal debate concentrated on the status of grade 9, with some remarks being devoted to grades seven and eight. The rapid development of community-junior colleges has added a completely new dimension to the framework of high school organization, however. The increasing popularity of post-secondary education has caused many educators to view the initial two years of college as levels 13 and 14 of the elementary-secondary continuum. The factors behind this concept are several. In many segments of society, a high school is no longer sufficient to guarantee a worthwhile career. Increasingly larger proportions of the population are seeking post-secondary education yet many of these individuals have neither the time nor the financial resources to attain a four year degree. The geographical dispersion of two year institutions also makes them attractive. In this context, the junior, vocational, or community college often becomes the equivalent of grade levels 13 and 14. The organizational questions which attend these developments are many. They may form the core of discussion concerning high school structure in succeeding years.[63]

In the State of New York, the position of two year, post secondary education as the organizational equivalent of grade levels 13 and 14 is readily apparent. The Empire State's system of two year institutions is administered through a network of community colleges. The Board of Cooperative Educational Services (BOCES) is another educational institution which provides a wide variety of programs which compliments the high school curriculum. Included in the

BOCES program are curricula such as occupational education, teacher education, guidance, and special education. BOCES centers, spread throughout the state, make important efforts to relate to the needs of local areas. In many ways, BOCES programs function as extensions of high school curricula. In other instances, such as those involving special education, BOCES programs perform tasks not served by secondary schools.[64]

The distribution of the various sizes of American secondary schools has varied considerably over the course of time. In 1920, about 94% of all high schools were of the 9-12 organizational structure. This fact reflected the educational climate of the period. Population increases dictated a division of the traditional K-12 continuum and this partition had proceeded along traditional lines separating grades 8 and 9. Very few of the other high school organizations existed in 1920. Five percent of all institutions were of the 7-12 variety, with other organizations comprising the remaining 1%.[65]

By 1952 a number of factors had intervened to change the 1920 pattern. The growth of the junior-senior high school had proceeded at a rapid pace, with 7-12 institutions occupying 36% of the national total. The proportion of 9-12 senior high schools had dropped to 46%, almost all of these being in districts with K-8, 9-12 structures. The remaining proportion was made up of senior high schools with 10-12 organizations.[66]

The seven years between 1952 and 1959 further altered the distribution of high school organizations. The junior-senior high school proportion continued to gain, rising to 42% of all institutions. The decline of the 9-12 high school also continued. The percentage of schools employing that setup sank to 30. The 10-12 senior high school proportion also continued to gain, rising to a full 21% of the population of secondary schools.[67]

The years since 1960 have witnessed still further changes. Statistics from the nineteen seventies reveal that the 9-12 pattern has reversed its decline and even recorded small gains. About a third of the nation's secondary schools now use this setup. The growth of middle schools also swelled the proportion of 10-12 institutions to about a third of the national total. Gains in numbers of these institutions were apparently recorded at the expense of junior senior high schools, whose numbers decreased to include the remaining third of the national total.[68]

The popularity of all three major approaches to high school organization point up the interest currently being drawn by this topic. Discussion concerning the role of two year colleges as adjuncts of high school organization may add to these elements to make the topic one of the most vital in all of public education.

Summary and Conclusions

Research examined in this essay focused on all three levels of American elementary and secondary education.

The parallels between the growth of American education and changes in school organization were noted. It was found that the rise in population combined with the geographic dispersions of the nineteenth century necessitated the continuum in isolated areas. It was also seen that the increase in population density which occurred when the physical limits of the Nation were reached helped make possible the division of the K-12 range into various groupings. Finally, the present stabilization and decline of the respective national and school populations was discussed. Its influence on the consolidation and redivision of existing levels was speculated upon.

The treatment of elementary schools revealed that these institutions initially included grades K-8, but rolled back to K-6 and K-5 when psychological

studies revealed that seventh and eighth graders should have different facilities. Economic and other psychological research in recent years point up the advisability of the division of elementary organization into K-2, 3-5, and K-3, 4-6 structures.

It was emphasized that the American middle school is a comparatively recent development. It was noted that this institution, like its predecessor, the junior high school, grew out of a recognition that seventh, eighth, and, in some cases ninth graders, have special emotional needs which make their inclusion in a separate institution advisable. Research also revealed that due to increasing maturation, children (especially in urban and suburban areas) should have the 5-8 and 6-8 patterns the most desirable middle school configurations.

Available evidence also showed that, until recently, questions of high school organization focused on the position of the ninth grade. It was found that the junior high and middle school movements, which at one time annexed grade 9, are now returning it to the high school. The junior senior high school, including grades 7-12, also continues to be popular, especially in areas of low population. The possible organization of the junior college as high school grades 13 and 14, is an interesting alternative whose possibilities are only beginning to be explored and should be reviewed with university college trustees. BOCES has become an important adjunct to present rural and suburban high school education.

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CLASS SIZE AND STUDENT ACHIEVEMENT

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CLASS SIZE

Class size has been one of the oldest and most controversial topics of debate in American education. Receiving much attention during the 1800's, research concerning class size heightened during the early twentieth century. The issue has been the object of intense partisanship and has profound implications for students, teachers, and taxpayers.[1]

As debate concerning class size increased, related research increased proportionately. Beginning in 1903, investigators probed numerous aspects of the issue. By 1950, over 250 separat writings had dealt with class size. In a landmark survey, Howard Blake exa. ined these studies in 1954. Using exacting techniques, Blake concluded that only twenty-two of these efforts used legitimate research procedures. However, Blake's work also has become an object of criticism, with many researchers taking issue with his findings. In any case, Blake's study did encourage both an increase and an improvement in research concerning class size. At the present time, the topic is probably one of the most thoroughly researched in all of American public education.[2]

Studies concerning class size fall into various categories. For convenience sake, however, these might be grouped under three headings: academic, institutional, and financial. The conclusions reached by existing research concerning class size will be considered relative to each of these three major areas.

Class Size and Academic Factors

Most of the research regarding class size has focused on pupil achievement, the chief measure of academic success. The questions of definition which surround the issue are numerous. There is a great deal of variation concerning the precise meaning of the terms "small class" and "large class". The meanings of the terms often depend on the size and location of the school district in question. The specifications of exactly which groups of students

constitutes a class also vary among districts. Remedial classes, band rehearsals, and athletic practices have been included in some studies on the subject. Problems also arise in comparing general means of class size with those obtained in specific subject areas. Foreign language and advanced mathematics classes tend to be small and highly variable in size. Physical education and music classes tend to be very large in size.[3]

These questions need not discourage investigations concerning class size. They should, however, encourage critical examination of studies on the subject. As was previously noted, a major survey of research on the issue was carried out by Howard Blake. Blake claimed that, of the twenty-two studies he found acceptable, sixteen favored small classes, three favored large classes, and three were inconclusive. Yet Blake's work was conducted on questionable basis. The investigator made no attempt to establish uniform definitions of small and large classes. Blake also made no effort to equate or compare the populations sampled in his twenty-two acceptable surveys.[4]

Since Blake made his survey, numerous researchers have investigated various aspects of the relationship between class size and academic achievement. In a 1967 study, Johnson and Scriven probed the achievement of 7500 seventh and eighth grade pupils in 265 English classes. The experimenters found no significant relationship between pupil achievement and class size, even between classes of twenty-four or less and thirty-four or more students. Johnson and Scriven subsequently concluded that " ... uncritical worship of small classes for all subjects, grades, and ability levels is unjustified."[5]

In another study of achievement in twelfth grade English classes, Warburton (1961) found students in the larger groups to be superior in listening, reading, and composition. Based partly on this research, the Pittsburgh city school system dropped two experimental high school English programs. In one program, class size had been lowered and teachers had been scheduled with fewer classes each day. In the other, assistants had been hired to aid

in the correction of English compositions. Students in both special programs failed to learn significantly more than others elsewhere in the system.[6]

Other investigators probed the connection between class size and pupil achievement in social science courses. In a 1969 investigation conducted in Pennsylvania high schools, Grove concluded that the two factors were unrelated. His work is of special significance since it related achievement in large classes embracing from 50 to 100 students, and small groups including between ten and fifteen individuals. Despite the considerable difference in size between these two types of classes, Grove found no significant differences between their respective pupil achievement levels.[7]

Other important studies have been concerned with the relationship between class size and pupil achievement in high school mathematics classes. Anderson et.al (1963) found no statistically significant difference between the two factors in eighth and ninth grade classes.[8] Madden (1968) conducted a unique study comparing the achievement of students in very large (70-85) classes, with the performance of those in smaller (25-40) groups. After conducting several tests, he concluded that student achievement was significantly higher in the larger groups and that the achievement of students of average ability was even higher in the larger groups than was that of the general population.[9] In a study of mathematics achievement in parochial schools, Menniti (1964) compared classes in two Indiana dioceses. He found no difference in the achievement of the two groups. Studies conducted at universities have also established the lack of significant differences in student performance in large and small lecture sections.[10]

Research in individual subject areas seems to conclude either that no differences exist between pupil achievement in small classes and pupil achievement in large classes, or that performance in the larger classes is superior. It should be noted that these conclusions are reached in various types of surveys,

ranging from ones involving continua of numerous types of class sizes, to others comparing greatly different group populations. Especially noticeable are those studies which point up the efficacy of extremely large (34-80) class sizes.[11]

General surveys support the conclusions reached in the various subject areas. In the same year Blake made his survey, Spitzer examined a wide range of high school classes and suggested that pupil achievement bore no relationship to class size.[12] In a later effort, Johnson and Tobb (1961) probed the influence of class size on the achievement of students in English, Plane Geometry, American History, and Biology in a number of Colorado high schools. The authors established that " there were no significant differences in the achievement of pupils in classes of 20, 30, 60, and 70". They also suggested that small groups were not academically feasible.[13] In another survey of secondary school students, conducted in New York City Schools, Fox (1967) could find no cause-effect relationship between class size and pupil achievement.[14]

While most studies have established either the superiority of large classes, or the lack of significant differences between pupil achievement and class size, researchers have found small classes to be applicable in a number of cases. In a broad examination of Baltimore high schools, Furno and Collins (1964) found the small classes to be particularly effective in increasing the academic achievement of non-white children. This particular investigation was important, since it measured student performance over a five year period. Although significant gains were recorded by non-white children, white students in the small classes showed no such gains.[15] Other studies have since demonstrated that some white children do benefit from the smaller classes. The only high school cases in which this has been demonstrated, however, involved low ability pupils.[16]

Extensive investigations have also been conducted concerning the achieve-

ment of elementary school children. In a 1968 study, Zoeller examined the possible connection between pupil performance and class size in a wide range of Wisconsin high schools. Vocabulary, arithmetic, language, and social studies were examined, with control groups and numerous tests and cross-analyses employed. From the data collected, it was concluded that class size had no effect on pupil achievement with areas surveyed.[17] A 1969 study conducted by the Institute of Administrative Research of Columbia University's Teachers College covered pupil achievement and class size across a wide range of grade levels, subject materials, and abilities. From test analysis, it was concluded that a small inverse relationship existed between class size and scholastic achievement across the full range of the subjects. Yet this relationship was apparent only in the general sample. It did not appear with any consistency from sample to sample. Mean difference scores were appreciably lower in class sizes including more than forty pupils, yet below this number, appreciable variation did not occur. One of the highest mean difference scores was recorded by the classes which contained between thirty-six and forty pupils. There was a similar lack of pattern among the subject areas sampled. The only small classes which showed consistently higher pupil achievement were elementary foreign language classes. The authors cautioned that there may not have been enough of these groups sampled to obtain significant results.[18]

Other studies have supported the conclusions reached by Zoeller and the Columbia University research effort. In a nationwide survey undertaken by James Coleman through the Office of Education, sweeping conclusions were reached. Coleman, after extensive analysis of sample including subjects in every state, declared that pupil:teacher ratio showed a consistent lack of

relation to achievement among " all groups under all conditions".[19]

The weight of this evidence caused some researchers to reexamine the work of Blake and others. Holland and Galfo, investigating the methodological and analytical quality of the range of studies, concluded that results were not consistent. They suggested that either a number of the research designs used were themselves invalid, or that there were factors, other than class size, which acted to produce the results obtained.[20] In another examination of available research, Rossi (1971) suggested a psychological reason for the confusion concerning class size. Rossi reasoned that confirmation of null hypotheses brought with it a negativism which contradicted the human desire for positive results. Because of this, he argued, investigators had gone to extreme lengths to obtain some sort of connection between class size and pupil achievement, even if no such connection existed. The result, Rossi suggested, was a long history of research on the topic:

> ".... in which each new generation of educational psychologists attempted to find a strong negative association between class size and learning, but with only equivocal success: the results of more than thirty years of research on this topic can be summarized as showing that sometimes class size had a small positive effect and sometimes a small negative effect and can be interpreted as showing that the universal sampling variation around a universal value has no effect at all."[21]

Studies concerning class size in elementary schools continue to be conducted with the conclusions of recent research similar. no consistent relationship between class size and pupil achievement appears to exist. Short term trends have come and gone. A growing body of research indicates that pupil achievement may be higher in larger classes, including between twenty-five and thirty-five students.[22] Yet to characterize this result as definitive would be as fallacious as to legitamize scattering of surveys which have favored smaller groups.

Research covering the full range of public school classes, as well as

that focusing on elementary or secondary groups, also fails to establish concrete relationships between pupil achievement and class size. A listing of these studies would be tedious, yet a few have been the subject of discussion.

The Outlier Study, conducted in New York State school districts during 1971 and 1972, embraced all of the State's school districts. Unlike a number of other investigations, it also utilized multiple regression techniques to isolate these factors which produced the results obtained. Use of regression was a departure from most previous experimental methodologies, since it enabled precise definition of the differences obtained and eventual location of the influences which produced them. The Outlier study found that class size had some negative relation to achievement, but cautioned that this connection did not approach statistical significance. Regression analysis demonstrated that the relationship between enrollment and achievement was a function of urbanness rather than size.[23]

Also of importance are the Indicators of Quality in Education Studies, carried out under the auspices of Teachers College, Columbia University. In 1970, a number of these surveys established that subjects taught and styles of class activity were much better predictors of student performance than group size. Even the relationships between class size and pupil achievement obtained in the Indicators of Quality investigations have been disputed, however. One authority claimed that the studies favored " smaller size groups, where individualization, group activity, and interpersonal regard was most likely to appear by the very nature of the social organization alone."[24]

One of the most recent studies of the relationship between class size and learning comes from South Carolina. The Department of Education for the state analyzed the impact of reducing class size in one fourth of the public school districts and found that after one year that the reductions produced higher

achievement in reading but virtually no effect in arithmetic. Meanwhile, state legislators are attempting to decide if the increase in reading performance is sufficient to warrant the additional financial aid in small classes. (The second year of the research effort may modify the initial conclusions.)[25]

From the present perspective, the best materials concerning class size and pupil achievement may be the summaries of research on the subject. Individual studies have multiplied to the point where exhaustive listings becomes impractical. A recent slackening of the pace of investigation in this area also indicates that a time for summarization may have arrived.[26]

In a wide ranging analysis of the relation between class size and educational outcomes in elementary, as well as secondary schools, Lindbloom (1970) established that little if any relationship existed between the two factors. The investigator probed individual research studies available in periodicals, monographs, doctoral dissertations, research reports, reviews of literature, and other research related to class size.[27] Another reviewer (Smith), the following year, reached the same conclusions. Smith's work was significant since it was prepared under the auspices of the Council of Teachers of English. The language arts had been the subject area where results linking pupil achievement to class size had been obtained.[28]

The most recent reviews of literature either favor larger classes, or reject the need for certain class sizes. An international study of the issue, conducted at the close of 1974, concluded that existing research shows student achievement either to be not related to class size, or to be higher in larger classes.[29] A wide ranging analysis of American literature on the topic, carried out in 1975, called the connection between class size and pupil performance a contention, not well supported either by research or by any consensus in the literature.[30]

A 1976 examination of pertinent literature found that those studies which rejected the connection between class size and pupil performance were based on test scores while those investigations which supported the connection were based on creativity, decline of behavioral problems and class control. The experimenters noted that, while evidence is present on both sides of the issue, the evolution of measurement techniques for creativity, class control, and the like is presently at a rather rudimentary stage.[31]

Literature in higher education also rejects the connection between class size and pupil achievement. A 1976 survey of literature concerning college teaching concluded that research did not substantiate the notion that class sizes had an influence on student cognitive growth. Breakdowns of large university classes, the authors suggested, must therefore be justified by social or other considerations.[32]

The most recent survey of literature concerning class size confirms previous conclusions. In a wide ranging study of available research, Joseph E. Millard found data on effective class size to be inconclusive. The author cited studies favoring large and small classes, several of which showed no relation between achievement and size.[33]

The subject of pupil achievement and class size seems to be one of those rare issues which has, at the present time, been thoroughly researched from almost every possible perspective. It is thus one of those equally rare issues with no universal conclusions. The fact that existing research establishes no concrete connection between the two factors may be disconcerting to some. Yet there will always be those for whom facts must be positive in order to be real. The actuality is that little if any relationship exists between class size and pupil achievement in grades K-12. This should not exclude the possibility of initiating changes in class size. Yet it should establish that such changes must find justifications other than academic ones.

Class Size and Institutional Factors

The range of institutional factors which have been related to class size has not been considerable. Most have related in one way or another to the instructional personnel of public school systems. Charles Newell (1943) was probably the first researcher to assess the relationship between class size and institutional factors. Newell probed the connection between size and the ability of schools to " take on new practices". The investigator concluded that smaller classes encouraged teacher invention and the adoption of new and better practices.[34] Writing twelve years after Newell's study, Harold Richman argued that desirable instructional practices were dropped as class size increased.[35]

Since Newell and Richman, considerable quantities of research have accumulated concerning the relationship between class size and institutional factors. Much of this work seems to focus on teaching processes and teacher load.

The evolution of research concerning class size and teaching processes has not approached that attained in the area of pupil achievement. In the initial decades after Newell's work, almost all investigations on the subject were carried out at Teachers College, Columbia University. Some of these studies, such as that conducted by Whitsitt (1955) demonstrated that greater variety of teaching styles could be implemented in smaller classes.[36] Others, however, such as that of Richman (1955) have established the existence of a " Hawthorne Effect". Under this pattern, beneficial results were produced when teachers were informed of a forthcoming policy decision to reduce classes than when they were not so informed. It should be noted that the increase in innovation occurred when the decision was announced, rather than when the class sizes were actually reduced.[37] The Richman study implied that teacher innovation might be as much a function of institutional conditions and state of mind than of actual class size.

In recent years, the range of studies conducted at Teachers College has come under critical examination. It has been pointed out that standards of teaching behavior are not firmly established and usually vary from experiment to experiment. The cognitive processes defined in these studies are vaguely outlined even in the best available research.[38] It has also been noted that existing research on teaching styles carries with it a process, rather than an outcome orientation. This does not necessarily limit the validity of such research. But it does suggest that gains in innovative teaching are not being translated into increased student achievement.[39]

In a sweeping commentary, Rossi (1971) accused the Columbia University research group of biased investigations. Rossi claimed that the Columbia investigators used any criteria for teaching styles with the exception of pupil achievement. He alleged that such a division was based on the well known lack of a relationship between pupil achievement and class size. Rossi deduced that the best teaching methods would be those which produced the most significant gains in pupil achievement. In not using this important standard, he argued that the Columbia group was both creating more work for itself and ignoring an established fact. He stated that only years of effort would produce effective teaching process standards. At the same time, Rossi noted, an excellent measure of teacher effectiveness existed in the form of pupil achievement.[40]

Other researchers have both agreed with and rejected Rossi's conclusions. Those most concerned with teaching methodologies have labeled the critic's view as overly simplistic. Others have pointed to the cold, yet inexorable logic of Rossi's statements. Perhaps the entire issue of relating class size to teaching styles is problematic. The difficulties involved in the identification of teaching practices and student activities conducive to learning progress are

considerable. Since our society places a priority on results, in this case in the form of student achievement; and such results are being obtained through the present system, further research on the topic would seem to be intellectual rather than practical in nature.[41]

The relationship between teacher load and class size is also an ill-defined one. As in the case of the class size-teaching styles connection, definitive evidence for a single conclusion seems to be lacking.

Anderson (1950) probed the relationship between teacher load and student achievement. Through random selection, he obtained a representative sample from a full range of Minnesota schools. The investigator compared scores on chemistry final examinations for significance and found that students taught by individuals with lower teacher loads performed best. Anderson concluded that school systems were therefore justified in implementing smaller classes in chemistry, at least.[42] The study has received some merit. Unfortunately, the author failed to standardize the final examinations of the participants. Since all of the tests were drawn up and administered by local teachers, the author's confidence in the similarity of these examinations cannot properly be justified.

In a later study (1964) Ford compared the achievement of students in large classes supervised by one teacher and several assistants, with the achievement of students in smaller classes each taught by a single teacher. The study did introduce other variables, such as teacher qualification, into the load-size question, yet Ford did utilize standardized achievement tests. The results of the study established that students in the larger groups registered greater gains in writing skills and general achievement than those in the smaller ones.[43]

Research concerning class size and teacher load is particularly deficient.

Neither of the studies cited above adequately test the question, yet they represent a sizable proportion of the available research. In reality, the determination of teacher load for any subject or grade level appears to be a choice which should be decided on the basis of factors other than teacher load. Various researchers suggest the application of reasonable judgement in the light of contemporary standards and guidelines. This effectively implies the absence of a relationship between class size and teacher load.[44]

As in the case of academic factors, an investigation of research concerning institutional considerations produces no definitive evidence that one class size is preferable to another. Unlike academic factors, about which research has been plentiful, few adequate studies exist concerning teaching styles and loads, many of which have been questioned. Yet the conclusions seem to be inexorable. There are no data which suggest that teaching styles and loads are influenced by class size. Even if the data did exist, however, the differences apparently fail to show up in pupil achievement. On the one hand, the research has not been completed, yet the final score makes further investigation unnecessary.

Class Size and Financial Considerations

A final area of investigation concerning the impact of class size concerns the area which makes the entire educational process possible, the financial one. The quantity of research in this region lies somewhere between that of the two areas previously discussed.

Available studies concerning class size and financial considerations all have one thing in common: they conclude that larger classes are less costly than smaller ones. Varner (1969) contended such a financial advantage of larger classes was absolute. He cited a hypothetical case of a medium sized district with 15,000 pupils, an average class size of 30, and an average

teacher's salary of $7,000.. He noted that a reduction in the average class size from 30 to 29 would require 17 additional teachers and increased spending of $119,000 per year. He added that if class size were decreased from 30 to 25, 100 more teachers and $700,000 in additional expenditures would be needed.[45] Varner's figures are simplified, yet they are also 1969 figures. The considerable increases in the cost of living which have intervened since Varner's work would increase his expenditure levels by at least 50%.

In a facilities-oriented examination of class size, Earthman (1969) noted the effect of varying student teacher ratios. He noted that one hundred classrooms could serve either 2500 or 3500, depending on pupil:teacher ratios.(PTR) If the 25:1 ratio were employed, he noted that forty additional classrooms would be required to accommodate the entire population.[46]

Other investigators have reached the same conclusions, the variations between studies always occur in the magnitude, rather than the direction of the differences observed. Not unexpectedly, a number of investigators have observed that the hiring of additional teachers in urban and suburban districts results in considerably greater financial burden than it does in wholly rural districts.[47]

Regression studies have revealed a positive relation between teacher salaries and average student achievement in school districts. These findings suggest that maintenance of high pay scales for existing teachers might be more effective than the hiring of new teachers at reduced compensation.[48]

Probably the most sophisticated examinations of the relationship between class size and financial considerations have been the cost effectiveness studies. Applying the same cost accounting techniques which have hitherto measured the effectiveness of businessess, researchers have established similar indices for educational finance and production. The results of these efforts have done much to define the actual numerical limits of the class size question.

Elaborate cost effectiveness studies have focused on the gains in pupil achievement which can be associated with prescribed increases in funding at the elementary level. In 1974, Heim and Perl, established that an additional $100 per pupil upgrading expenditures, dispensed on PTR, would result in minimal increases in student achievement. The highest gains, a mere 2%, were reported in reading in grades K-2. Gains of 1.3% and 1% were recorded in grades K-2 arithmetic and grades 3-5 reading. No measurable gains were recorded in grades 3-5 arithmetic.[49]

Cost effectiveness studies carried out in secondary schools produced gains in the 1% range in a few cases, and no gains at all in the majority of instances. It should be noted that these cost effectiveness surveys were undertaken using $100 per pupil expenditure increases as one of the variables. In actual situations, increased funds spent on teacher manpower, if they existed at all, would probably be far less. The financial costs of decreased class sizes are considerable.[50]

Another whole class of cost effectiveness studies has been conducted in the area of special programs. Many of these concern increased manpower, as additional staff would doubtlessly have to be hired to implement many learning plans. A number of them also include increased amounts of equipment which would be required for such programs. Studies undertaken in elementary schools have generally noted small gains in pupil achievement for the expenditure levels required. Inservice education programs produced almost no gains. Programmed learning resulted in 3% achievement gains in both reading and arithmetic for grades 3-5. Open circuit television produced achievement gains in both the K-2 and 3-5 levels, although all of these increases were on the 1-2% order. Closed circuit television caused similar gains.[51]

Studies undertaken in high schools also failed to establish that staffing increases and purchases of additional equipment actually paid off in student

achievement gains. Exceptions included laboratory materials for the sciences, machinery for industrial arts classes, and appliances for home economics, all of which have traditionally been seen as essential to the instruction of those subjects.[52]

From the financial standpoint, the impact of class size appears clear. The amount of research has not approached that accomplished in the area of pupil achievement, yet every available study reaches the same conclusion. Smaller classes cost considerable additional amounts of money. Greatly increased expenditures do not produce sizable gains in student performance.

The range of studies concerning class size in many ways runs full circle. One author summed it up, concluding that "We Don't Know Much for Sure About Optimum Class Size". He noted that, despite the flood of research on the subject, nothing approaching an optimum class size has been established.[53] Varner suggested that in order to produce the best results in the classroom, the size of the class must be appropriate to the intellectual and emotional needs of the pupils, the type of learning desired, the skills of the teacher, and the nature of the subject matter. Varner thus suggests that, except from the obvious financial one, there is no general relationship between any factor and class size.

These conclusions need not be so puzzling. Can it be so difficult to believe that there are two factors between which there is no relationship? It is hard to convince ourselves that what we have been doing all along might be the right way? Perhaps the fallacy lies in part with those enlightenment ideas, those desires to change the world for the better, out of which the Republic was born. It may be the case that many of us are seeking to alter even those things which are sufficient in their present state.

Summary and Conclusions

This survey examined available data concerning the relationship between class size and various factors.

Research definitely established that decreases in class size are quite expensive. Numerous studies concluded that substantial additional expenditures devoted to smaller classes and special programs resulted in very small, if any increases in pupil achievement.

Investigators also concluded that teachers generally prefer small classes because they experience less strain and feel able to implement new instructional styles in such environments. Although some studies indicated that certain styles were favored by larger or smaller classes, no impact of either teaching styles or load on pupil achievement could be detected.

Beyond the issues of cost and teacher preferences, research concerning class size was inconclusive. The connection between class size and pupil achievement has been one of the most thoroughly investigated in all of American education. Yet no relationship has been established between the number of students in classes and the academic achievement of those individuals. This important conclusion lessens the significance of discussions concerning teaching styles, teacher loads, and class size, since these factors do not influence pupil achievement.

Research concerning class size thus indicated that, although greater individual attention was possible in small classes, only small benefits could be realized from such groupings. At the same time, however, the financial burdens brought on by such groupings would be considerable.

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ABILITY GROUPING IN AMERICA:

THE PRESENT PERSPECTIVE

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ABILITY GROUPING IN AMERICAN EDUCATION: THE PRESENT PERSPECTIVE

Ability grouping is the organization of graded classroom groups so that children of a given age and grade who function similarly in learning achievement or capability are placed together for instruction.[1] The practice began in the colonial academies, where the "brighter" sons of aristocratic families were grouped for separate instruction. During the 1950's, a national crisis of confidence stirred by the Soviet Union's 1957 launch of the first artificial earth satellite, Sputnik I, brought about a strong reemergence of proponents of ability grouping. Fearing that the Russians had achieved a decisive technological lead over the United States, American education moved quickly to group its best students into the same classes. It was hoped that this strategy would serve to enhance the efficient selection of the nation's best intellectual talent so that these people might be utilized to close the technological gap.[2]

Twenty years have passed since the launch of Sputnik and the reemergence of ability grouping. While Sputnik I has long since disappeared from the skies, ability grouping is still with us. Furthermore, its use is now widespread, in a number of settings - especially in American secondary education.[3]

The following discussion will examine the various facets of ability grouping in relation to procedures and rationale.

Problems of Definition

Any examination of the development of ability grouping must deal with both the theoretical models and their actual application. This section will focus on problems of definition and of application.

Questions of definition have arisen at both the "ability" and the "grouping" ends of the concept. One major dilemma concerns the exact nature of ability. If students are to be grouped according to ability, precise measures of this quantity must be obtained. In situations where students are not grouped,

measures of ability may not be as important, since individuals often receive the same basic instruction. In grouped settings, however, such measurement is crucial, since it will be the criteria for subsequent instruction.

A second major problem is that one must specify types of abilities. In 1976, S. Kenneth Riggs defined four general categories: academic, creative, kinesthetic, and psycho-social. Riggs pointed out that these areas might overlap to form various combinations.[4] Other researchers have produced more " ability" categories. Based on research carried out in 1941, Thurstone defined several such areas: memory, induction, verbal comprehension, word fluency, number, space, perceptual speed, rote memory, deductive reasoning, and inductive reasoning.[5] In 1959, J.P. Guiford defined cognition, memory, convergent thinking, divergent thinking, and evaluation as the five major groups of intellectual abilities, choosing to ignore physical and social abilities.[6] An extended discussion of the various systems of classification is not intended here. Rather, it should be kept in mind from the preceding discussion, that ability occurs in various forms and that little agreement exists on any system of categorization.

If there are various types of ability, may measurement be made parsimonious by utilizing a general index of aptitude? Historically, the familiar IQ or intelligence quotient has been employed for this purpose. This score, obtained by use of such tests as the Stanford-Binet, Wisc, CAT, and a multitude of others has traditionally been set forth as an indicator of general intellectual ability.[7]

A number of studies have investigated the factors which cause variance in IQ scores. A fair summary of the research would indicate that both genetic and environmental factors interact to produce the obtained variance.[8] Further questions concerning the nature of Intelligence Quotients involve the processes measured by the tests. J.W. Getzels and P.W. Jackson concluded, in a 1975 study, that intelligence tests measured intellectual, rather than creative

abilities. The two researchers noted that, while IQ tests adequately measured verbal and quantitative aptitudes, they did not gauge such aspects of creativity as the ability to produce new forms to conjoin diverse elements, and to seek new meanings.[9]

Many issues also are raised by the "grouping" element of the concept. Assuming agreement was universal on fixed categories of ability, the problems of grouping children with such talents into homogeneous groups would be considerable.

Researchers point out that groups which are homogeneous in one field or subfield will prove heterogeneous in others. For example, this problem would effect the organization in a typical seventh grade. Here a mere half of the students will be in the same third of their class in both reading and arithmetic. Five percent would be in the top third of their class in one area and in the bottom third in another. It is evident that blantant generalization of the adjective "homogeneous" has brought about the false notion that students who demonstrate high or low capabilities in one area have the same potential in other fields. It has been erroneously assumed that homogeneous grouping means that students are "homogenized" in ability.[10]

Problems also arise in the mathematical mechanics of homogeneous grouping. While heterogeneous organization is comparatively easy to attain by severe techniques, the selection of homogeneous groups introduces a host of vexing problems. Ability ranges must be delineated for each group. The arbitrary lines which separate these ranges are absolute. In any population, students with ability levels on one side of this line will go to one group while students with levels on the other side will go to another. Either the individual is a member of the set, or he is not a member of the set.[11] Due to the error involved both in measurement and in theoretical constructs, placement abuses must occur.

Moreover, the magnitude of the problem of ability grouping becomes

more apparent when the conceptual difficulties involved in the definition of ability are merged with those inherent in the definition of grouping. The organization of students into levels would be exceedingly difficult even if parameters of the various abilities were defined. Yet they are not defined. The grouping practice thus is of questionable validity due to the utilization of dubious theoretical bases and parameters.

Nevertheless, numerous attempts have been made to implement various types of ability grouping in American schools. As was previously noted, the two decades of grouping practices would seem to provide an adequate base for evaluation of the process.

Ability Grouping Applied

During the first decade after the launch of Sputnik, the use of ability grouping expanded rapidly in American schools. By 1968, about 77 percent of all school districts in the nation followed the practice at some grade levels. The process was most often implemented in large school districts and in the higher grades. In 1970, 46 percent of systems with enrollments of 100,000 or more reported use of the practice on a district-wide basis. At the same time, of those systems practicing ability grouping, twice as many used it in the secondary (7-12) grades as in the elementary levels.[12]

The second decade of ability grouping has largely been taken up with evaluation and modification of the practice. A number of analyses from the 1957-67 period exist, yet much more widespread research has occurred during the past ten years. Examination has proceeded on a number of levels, all of which merit consideration in any general examination of ability grouping

Ability Grouping and Academic Achievement

Much of the research which has been conducted concerning ability

grouping concerns academic achievement. Investigations have been conducted into various subject areas, as well as into general achievement.

In a study of 1,100 third, fourth, and fifth graders conducted over a one year period, Berkun, Swanson, and Sawyer (1966) found that homogeneously grouped children were superior in reading.[13] A later study (Oliver, 1970) implied, however, that homogeneous grouping does not necessarily provide a setting for greater gains in reading achievement.[14]

In a 1968 analysis of the effectiveness of ability grouping in second language teaching, Burroughs and Tezer concluded that homogeneous grouping resulted in some increase in the achievement of advanced groups, but seemed to cause difficulties in learning for all other groups.[15]

A mixed picture has been obtained in studies of student achievement in quantitative subjects. Writing in 1972, F.H. Flynn made a case for the effectiveness of homogeneous grouping in mathematics courses. Yet M.K. Jackson advanced equally convincing arguments against the practice a year later.[16]

Across the board examinations of academic achievement have pointed to a number of interesting patterns. Most general studies fail to establish that homogeneously grouped students perform better than heterogeneously grouped ones. In a 1972 comparison of homogeneous, heterogeneous, and flexible approaches to grouping, Cartwright and McIntosh found that no significant differences in academic achievement resulted from grouping of primary school children.[17] A 1968 National Education Association survey of research concerning ability grouping and scholastic achievement failed to establish the superiority of either homogeneous or heterogeneous grouping. The NEA study suggested that factors other than grouping were the primary determinants of academic achievement differences.[18]

Some researchers have concluded that heterogeneous grouping results in improved academic performance. A number of authors maintain that the practice produces general improvements in achievement.[19] Others, such as Leonard Marascuilo (1970) and James Wardrop (1967) have concluded, through their research that low ability children perform better under heterogeneous grouping, while high ability children perform equally well under either grouping practice.[20] While high achievers seem to profit under either technique, low achievers seem harmed by homogeneous grouping.

Another interesting set of research concerns the influence exerted by the labeling process entailed in any homogeneous grouping program. In a 1968 study of ability grouping, Schrank found that high ability labeled classes achieved higher scores than did low ability labeled groups. Schrank further discovered that a definite labeling effect was present in an experimental stimulated ability grouping, even though the grouping was actually random.[21] Other research confirms Schrank's conclusions. A national survey conducted by the Federal Office of Education found that grouping results in a trend toward achievement in superior groups and poorer achievement in average or low groups.[22] Lunn (1970) argued that ability grouping for academic achievement created a self-fulfilling prophecy, since students moved into higher groups did better while those moved into lower groups did worse.[23] In an independent study, Goldberg (1966) confirmed Lunn's conclusions.[24] Yates and Passow (1966) argued that the deep sense of inferiority experienced by lower ability groups tended to encourage social segregation.[25]

Another general area of concern seems to summarize various aspects of the problem. Studies indicate that some of the differences in academic achievement attributed to homogeneous grouping are less real than might be expected. Russell (1970) concluded that students in high ability groups do

not achieve substantially more than their counterparts in low ability groups. He suggested that unfair preferences given to students in the higher groups might act to artificially elevate their levels of achievement.[26] This is another variation of the self-fulfilling prophecy pattern discussed above. The trend is a most interesting one. It suggests that the placement of students in high ability groups may carry with it the promise of higher grades, merely for attendance in such groups.[27]

A microcosm of the total range of questions concerning ability grouping and academic achievement is found in the history of instruction of the educable mentally retarded. Individuals with mental handicaps have been one element of the student population which has a long experience of education in homogeneous groups. During most of the twentieth century, the general public and educators tended to believe that the best way to deal with mentally retarded children was to teach them in separate facilities, ranging from segregated classes to special institutions. This type of homogeneous grouping went largely unchallenged until the 1960's. At that time, various researchers demonstrated that separate classrooms have disappointing effects on academic achievement.[28] Other educators attacked the validity of the testing programs used to place students in the segregated groups.[29] Further research connected the labeling derived from placing a student in such classes to lower achievement.[30]

Problems with the academic achievement of the educable mentally retarded were a prime factor leading to the "mainstreaming" movement in recent years. Studies conducted during the 1970's pointed out that significant gains in academic achievement could be obtained if retarded pupils were placed in the same classes as other students.[31] The new pattern doubtlessly has its limitations, yet its emergence seems to demonstrate the viability of hetero-

geneous grouping across wide ranges of academic ability.

Ability Grouping and Affective Motivational Factors

The relationship between ability grouping and a wide range of psychomotivational factors has been widely debated. Part of this may stem from the fact that emotional-affective growth is much more difficult to assess than intellectual development and scholastic achievement.[31] The literature includes evidence to back almost any stand one might take on the issue. Yet authorities on the subject agree that recent evidence disproves the notion that the grouping of students homogeneously according to ability produces individuals with desirable attitudes and self concepts.[32]

Agreement seems to exist that ability grouping inflates the self esteem of students assigned to high ability groups and reduces the esteem of those in average ability groups. The disparity in motivational levels is thus increased by the grouping process.[33] Much of the research concerning self-esteem indicates that a student's view of himself is strongly influenced by the significance with which his peers view him.[34] In this context, it seems that the placing of low achievers into homogeneous groups creates a vicious cycle. The pupil with low self esteem is placed with others who also have low self esteem. Motivation problems stimulate other motivation problems, and conditions get worse, rather than better.[35]

The influence on high ability students is not so drastic, but it appears to be detrimental. The highest ranking students in high ability groups, their high self esteem reinforced by their position within the special groups, see themselves as unbeatable. Eventually, their motivation slackens. Students ranking at the lower end of the high ability group experience a different effect. They see their position at the bottom of their own group and forget that they are in high ability classes. Considerable loss of esteem and motivation results.[36]

The verdict on the effect of heterogeneous grouping on the motivation of students is far from conclusive. Working at opposite ends of the educational continuum, Bereiter and Engelmann, in research on preschool children; and Bloom and Broder,in studies of college students, reached remarkably similar conclusions regarding student motivation. The researchers established that poor achievers seem to learn to solve problems by first drawing on prior knowledge and then following through a gradual consideration of all relevant information. The four authors agreed that the best way for poor achievers to learn was to have the effective achievers solve problems aloud and then follow through themselves.[37] Obviously, such a process could not occur in homogeneous groups of under achievers. An eminent authority on the education of gifted, high ability students, A. Passow, has stressed that what is needed are programs which "...search for talent rather than simply screen out and bar participation in programs for the gifted are crucial..."[38]

Another whole area of motivation, student disciplinary problems, is only beginning to be explored in the context of ability grouping. Available research occurs in quantities too small to establish any definitive conclusions. Yet a 1976 study indicated that students in homogeneous classes experienced more friction in their classroom environments than did those in heterogeneous classes.[39] Other researchers have suggested that grouping consigns almost all students with disciplinary problems to the same classes. The result is that learning in these groups becomes almost impossible and disciplinary difficulties only exacerbate.[40]

Ability Grouping and Sociological Factors

Much research relating to ability grouping has focused on the interaction between the practice and various sociological conditions. The field

is a logical one for investigation since, high social class has been linked to high ability while students in low ability have been tied to low socio-economic levels.[41] This conclusion is not the result of some isolated survey. Studies conducted during the 1960's and 70's in a number of areas clearly indicate that the practice of homogeneous ability grouping both reinforces and perpetuates the separation of children along socio-economic lines.[42]

It has also been demonstrated that the grouping of children from low or average socio-economic groups into low ability classes restricts the range and quality of their experiences. Deprived of the challenge and optimism of upper groups, these frustrated children rather quickly develop into frustrated adults.[43]

The sociological pattern evident here is not merely disturbing, it is dangerous. Homogeneous ability grouping effectively stratifies school populations into an educational class system. Historically, American society has always been marked by a comparatively large measure of mobility. One of the principal means of advancement for individuals of low socio-economic level has always been the national system of public education. Yet research indicates that wholesale ability grouping would shut off that means of upward mobility. The conclusion may be rather startling, yet the weight of the evidence clearly supports it. One need only look toward that early form of grouping practiced in the colonial academies. Separate education for sons of aristocrats produced a colonial aristocracy.[44]

Ability grouping thus clearly threatens the socio-economic mobility which has formed a cornerstone of the American system. However benevolent the motives of those who would implement the practice, the baneful implications of the process should be seriously considered.

Other sociological effects of the grouping of children according to ability

also merit examination. The link between social factors and perceived self esteem has long been established. Experimenters have concluded that the individual's respect for himself results as much from his view of what others think of him, as from his own ideas. The social effect of ability grouping on pupil self esteem appears to be a negative one. One experiment involved the Individually Prescribed Instruction Program (IPI). Designed by the Learning Resources Development Center at the University of Pittsburgh, the IPI philosophy was to ensure a child's academic success while raising his self esteem. Myer used the IPI to test the effectiveness of this ability grouping program. Contrary to expectations, she found that the longer students remained in the program, the less confident they became of their own ability. Although students participating in IPI were able to complete their tasks, they were not able to perceive if others felt they were successful. The lack of peer approval caused disorientation, anxiety, and lack of confidence among the pupils.[45]

It becomes apparent, from a sociological standpoint, that there is considerable value in exposing a student to a full range of classmates. Homogeneous grouping appears to eliminate many of the reference gradations against which a student measures his progress.

Other sociological influences of ability grouping have also been investigated. Studies conducted during the 1960's established that assignment to low ability homogeneous groups carried with it a social stigma more debilitating than poor performance in heterogeneous classes. Researchers demonstrated that such assignment seemed to induce an attitude of frustration and belief that the stay in low ability groups would be prolonged. Students in heterogeneous classes, unencumbered by group labels, experienced no such problems.[46]

Other research has indicated that the fears of some of the students in

the above experiment may have been justified. It seems that reevaluation of students in homogeneous groups takes place with little frequency. This social inertia thus causes what has been called an "orderly sedimentation" of ability levels.[47]

The social effects of heterogeneous grouping have not been extensively investigated. Studies do indicate, however, that low ability students do tend to model themselves after high ability counterparts and thus increase their learning rates. The role of this process in problem solving has already been discussed.[48]

The whole question of teacher-pupil relationships is another sociological aspect of ability grouping which is only beginning to be examined. Available research indicates that teachers assigned to low ability groups show a lack of motivation. This trend seems particularly unfortunate since these groups appear most in need of motivated, enthusiastic instruction. Problems also exist in the teaching of groups of gifted children. Studies suggest that the range of individuals suited to teach homogeneous, high ability classes, as opposed to heterogeneous ones, may be rather narrow. Researchers have recommended that elaborate selection procedures be designed for the selection of such teachers.[49]

The mainstreaming of the educable mentally retarded also has social implications for the practice of ability grouping. It should not be forgotten that the mainstreaming process has broken down the segregation of the retarded students in separate classes which helped prompt the mainstreaming movement. There seems little need to waste the years of low ability students in an isolation such as the one once practiced with the retarded.[50]

Ability Grouping and Philosophical-Legal Conditions

The importance of philosophical and legal considerations cannot be overlooked. The perceived meaning of research studies often hinges on one's

own beliefs and biases.

The philosophical implications of ability grouping are many and wide-ranging. Supporters of the practice agree that it segregates students, yet maintain that each of the segregated groups benefits. They argue that individual differences are better taken into account because instruction is individualized. They also point out that homogeneous grouping makes the range of competition more realistic. [51]

Opponents of homogeneous grouping claim that the practice actually harms the individual by placing his educational development in an artificial situation. They add that heterogeneous, rather than homogeneous grouping is present in most life situations. [52]

The philosophical difference between the two practices probably depends on the perspective of the individual concerned. Parents of gifted students often favor homogeneous grouping, believing that it will best develop their children's capabilities. Other individuals see heterogeneous grouping as best simulating the society as a whole. [53]

Clearly, both sides have well-reasoned points of view. Living in a democratic society, however, it would seem that our principal attention should be turned toward the perpetuation of that same democratic society. The value of separate schooling for an elite should not be discounted. The aristocratic education of colonial Virginia furnished the United States with four of its first five presidents. Yet, the trials of the early days of the Republic, which demanded stern leadership, have been replaced by different times. Many of the domestic difficulties of the last two decades have resulted from a lack, rather than an excess of mass education and participation in government. [54]

The implications of these patterns for ability grouping are considerable. In a world where the overwhelming majority of the sovereign states are ruled

by some type of aristocracy or dictatorship, democracy is an increasingly rare commodity. The American brand of government and society grew, in a large measure, out of our educational system. Grouping was a latecomer to educational society. The one room schoolhouses combined all grades. The institution of the present graded levels proceeded at a slow pace over a period of several decades.[55]

American education, like American society, has shunned established elites. To be sure, the United States has and continues to have its special interests. Yet America's elites have been ephemeral compared to those of more stratified societies. The Rockefellers and the Tafts have been established for generations. The Hapsburgs and Romanovs reigned for centuries. As one examines the range of societies and governments present on the planet, it becomes increasingly apparent that the American experience is indeed a unique commodity. Again it must be emphasized that, whatever the merits of ability grouping, the roots of that experience lie in a heterogeneously grouped system.[56]

From a philosophical standpoint, the types of elites which have threatened our democratic system have varied. During the early nineteenth century, it was the aristocratic schemes of Aaron Burr, in later years it was the Southern aristocracy. In more recent times, the threat of a technical bureauocracy or technocracy has emerged. It is more of an unconscious elitism, yet it is nevertheless dangerous. Like the aristocratic patterns of previous times, it seems to be inculcated within the educational system. Homogeneous grouping can only serve to intensify such a pattern of elitism. Constant contact of the gifted with the gifted creates an intellectual elite, a group which, like the pre-1917 Russian intelligentsia, may direct itself toward objectives and values outside of the needs of the total society.[57]

Consider also the German Reich during the first half of the century. Elitism in its truest sense was a principal practice of the Nazi philosophy. By segregating and developing the "mentally and physically gifted" members of their ranks, the Nazis felt that society as a whole would benefit from the leadership of these chosen few. As with the previously cited practice of elitism, the real needs of society were not being fulfilled and collapse of the system was inevitable.

A parallel can be drawn to grouping in educational systems. Elitism, by segregating selected individuals for special considerations, eliminates stimuli which arise from interaction with other levels of students, stimuli they will most certainly have to face when they leave the educational setting. Grouping by ability may thus bring about long range adverse attitudinal changes in members of the " elite" group. For example, students grouped for special instruction throughout their public school experience develop an attitude of superiority. They tend to look down at students outside of their own select group. However, when these gifted students enter a college setting, they may no longer possess talents which are superior to those of their classmates. The subsequent conflict between the self esteem they have developed in public school and the disappointing reality they now must face may be devastating for the individuals' coping ability.

The previously cited research of sociologists supports these notions. Segregation of groups in school promotes stratification in the society. Continued stratification eventually eliminates mobility and causes the system to stagnate.[58]

The few research studies which have tested the philosophical implications of ability grouping support these conclusions. In a 1973 survey, Esposito concluded that the cardinal educational objective of providing equal opportunities for all students could not be realized under homogeneous grouping.[59]

Other researchers have established that the process may lead to decreases in the social mobility of groups.[60] Others have suggested that it may restrict the integration of various minorities into American society.[61]

The principal arena in which the various notions of ability grouping have been tested is, and continues to be, the United States judicial system. In many cases, individuals with concrete problems involving various types of ability grouping have turned to the courts. The result has been a stream of legal opinion concerning the germaneness of ability grouping to the American experience.

Because education has been, historically, a state concern, a major part of the legal controversy in the United States has involved a myriad of state laws and guidelines which regulate public instruction. Litigation directed against ability grouping began with cases concerning the classification of retarded children. Suits won in 1971 (Pennsylvania Association of Retarded Children vs. Commonwealth of Pennsylvania) and 1972 (Mills vs. District of Columbia Board of Education) provided that hearings be accorded to children identified as retarded before changes could be made in their educational status. Procedures were also established to insure that parents and legal counsel for such children could gain access to all records and evidence on which reclassification might be based.[62]

Although the Pennsylvania and Mills cases concerned retarded children, their use might easily be extended to permit all children access to mainstream education.[63] The courts have already questioned the use of IQ tests as standards for the identification of educable mentally retarded students. In the case of Larry P. vs. Riles, a California court held that use of IQ tests in segregating a number of students had the effect of denying them equal protection of the laws.[64]

Although the courts have, at this time, handled only a limited number of cases involved ability grouping, at least one landmark decision has already

been reached. The case, Hobson vs. Hansen, challenged the District of Columbia's tracking system. In his decision, Federal Justice J. Skelly Wright ruled that the D.C. variety of ability grouping violated the federal constitution because its labeling of students amounted to de facto segregation. The court found that students were placed in the various groups at early ages and were rarely able to escape from these classifications. It also noted that the homogeneous grouping process inflicts harm because it limits interaction between children and places a stigma on low ability groups. The court also condemned the practice because it gave institutional support to the sense of inferiority which already existed among slow learners.[65]

The legal future of ability grouping is difficult to predict. Authorities point out, however, that homogeneous classification seeks to channel American education to serve a narrow range of aims when, in fact, the system has always served a wide variety of purposes. They conceded that, even if ability grouping could maximize academic achievement, it might operate against other historical goals of American education such as the building of effective citizenship.[66] Based on these conclusions, the legal outlook for homogeneous grouping would not seem bright.

Ability Grouping and Financial Considerations

There has been some contention that homogeneous grouping tends to be more expensive than heterogeneous classification. For example, if procedures are implemented to identify students and train instructors for special groups, instruction and personnel costs would be higher.[67]

However, financial considerations are not meant to establish the superiority of one type of grouping over another. It is suggested, however, that analyses be made to determine if gains made in the more expensive program or programs are really worth the monetary cost.[68]

Alternatives in Ability Grouping

It should be remembered, in any consideration of ability grouping, that homogeneous classification is not the only method of individualized instruction available.

Ability grouping in specific subjects may be employed. This practice would eliminate many of the problems connected with across the board ability classification. Scheduling is probably the principal obstacle to the implementation of this system.[69]

Peer tutoring, individually programmed instruction, pre-school education, and enrollment of high school students in college courses are all methods of individualized instruction which can be pursued on a voluntary basis. These practices do entail group education, yet they supplement, rather than replace heterogeneous grouping. They also eliminate the need for wholesale, and, in some cases, irrevocable upheavels in K-12 systems.[70]

A number of other approaches to individualized instruction have also been developed. The advantages of these practices stem from the facts that they are varied, voluntary, and supplemental rather than designed to replace heterogeneous grouping. Unlike homogeneous grouping, their implementation and elimination can be use on a selective basis. They are also far easier to evaluate experimentally.

Summary and Conclusions

A full range of aspects of ability grouping were examined in this study. On the basis of available research, the following conclusions were reached:

1. Ability is difficult to define. Individuals who possess ability in one area do not necessarily manifest the same level in others.
2. Homogeneous grouping does not produce groups homogeneous in all respects. In other words, homogeneity is almost impossible to achieve.
3. Evidence reveals that students grouped for ability show no significant

gains over students grouped heterogeneously.

4. Numerous studies indicate that students who are grouped heterogeneously actually gain more than those homogeneously grouped.
5. Research indicates that a label assigned to a group has much to do with the eventual achievement of students in the group. Children placed in low ability groups are academically handicapped. Children placed in high ability groups do not achieve more, and may be unfairly treated.
6. Concern for child self concept is also warranted. Low ability groups produce children with low self concepts and low motivations to achieve academically.
7. Homogeneous grouping may contribute to social stratification by preventing the development of social mobility among low socioeconomic groups.
8. Homogeneous grouping contributes to a pattern of social elitism counter to American education and society.
9. Both state and federal courts have declared that homogeneous ability grouping denies students equal protection of the laws.
10. A number of types of individualized instruction, which may supplement heterogeneous grouping, exist as alternatives to homogeneous grouping.

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AN EXAMINATION OF TRENDS IN PERFORMANCE ON THE ACT AND SAT EXAMINATIONS

EA 010 805

An Examination of Trends in Performance on ACT and SAT Examinations

The decline of pupil performance on standardized examinations such as the Scholastic Aptitude Test (SAT) and the American College Testing Program (ACT) has brought forth deepening concern about American Education. The pattern of lower national test scores, occurring over a period of several years, has caused many to seek an explanation of what may be wrong with American education and society.

The fact that the decline in test scores has occurred on examinations taken by college bound high school students further heightens the seriousness of the problem. What will be the future of the United States if our most talented students suffer a decline in ability? The evidence for the trend of poorer achievement is powerful because both the SAT and ACT assess similar mental tasks. Thus, they are somewhat uniform measures for students who take them. Both tests are utilized to complement high school academic records as predictors of subsequent success or failure in higher education.[1]

The SAT was introduced in 1926. Technical changes in test structure were incorporated during the 1930's. High School students who took the examination in April 1941 became the standardized population to which subsequent participants were compared. On a range of possible scores which stretched from 200 to 800, the arithmetic mean of the April 1941 group was set at 500, the precise midpoint of the continuum. The corresponding standard deviation was 100.[2] Since 1941, various modifications have accompanied the basic SAT. The Preliminary Scholastic Aptitude Test, or PSAT, was introduced as a measure of the performance of high school juniors. Beginning in 1974, reading and vocabulary subscores of the verbal section of the test were reported separately.[3]

From the 1940's through the early 1960's, while SAT scaled means alternately rose and declined, the overall result was an increase.[4] In the mid nineteen sixties, however, a definite decline began. Years of relatively steep declines in scaled means were punctuated only by years of less precipitous ones. Between 1966-67

and 1974-75, the mean SAT verbal score fell 32 points, while the quantitative score dropped 20 points. Over a fourth of the total change in verbal scores occurred between 1973 and 1975. The decline in scores was broken only by the results of the 1976-77 test administration. Verbal mean scores from that year were almost identical with the resultant scores for 1975-76 while 1976-77 mathematics scores showed a slight gain over the previous year.[5]

In view of the stability of test scores prior to the mid nineteen sixties, the last decade of constant score decline must be considered to be significant. The range of test score decline during this period is anywhere from two to three times the magnitude of change previously experienced.[6]

Declines in scores recorded on the SAT examinations have been accompanied by parallel drops in ACT results. Initiated in 1959, the ACT has traditionally sampled the achievement of high school seniors in Western, Southern, and Midwestern states. Student achievement is tested in four subject areas: English usage, mathematics usage, social studies, and natural sciences. Possible scores range from 1 to 36, with the standard deviations in a range of 5.4 - 7.7.

The early years of the ACT, like those of the SAT, produced little variability of score means. Between the 1962-63 administration and the 1969-70 administration, average composite scores oscillated in a range from 19.0 - 20.0. Average scores on each of the four subject area sections varied within a similar range. The decline in ACT scores which began during the early nineteen seventies thus occurred later than the declining pattern of the SAT. By 1973-74, the mean composite score had fallen from the 19.0 - 20.0 interval to a level of 18.7. The decline did not occur uniformly across the four subject areas sampled by the examination. Mean scores fell 1.1 points in English, 1.5 points in mathematics, and 2.7 points in social studies. Natural science mean scores remained virtually constant.[8]

The recent histories of the SAT and ACT chart a significant decline of student performance in both verbal and quantitative areas. The SAT and ACT are the predomi-

nately utilized achievement measures of college bound high school youth. The fact that both tests indicate achievement decline is indeed ominous.

Studies using other standardized tests have investigated the achievement of various segments of American student populations. Their results supplement the statistical picture outlined by the SAT and ACT experiences.

The Preliminary Scholastic Aptitude Test (PSAT) samples the performance of high school juniors in verbal and quantitative areas. When PSAT scores are converted into SAT units, the PSAT scaling ranges from 200 - 800 with a standard deviation of 100. The test was initially designed as a measure of the performance of 11th grade students, as well as a pre-SAT orientation to achievement testing. In recent years, it has also become the qualifying examination for the National Merit Scholarship Program.[9]

Unlike scores on the SAT and the ACT, PSAT scores have not experienced a drastic decline during all or part of the last decade. After rising from 410 to 435 during the initial years of the test (1959-64), PSAT mean verbal scores alternately rose and fell. Peaks were reached in 1966-67, 1968-69, and 1972-73.

Lower mean scores characterized the intervening years. A similar pattern of alternate rises and declines marked PSAT mathematical scores. Recent administrations of the test saw the average mathematical score means rise to successively higher levels.[10]

The pattern of PSAT scores may not be as high as it appears to be. Various researchers, most notably Modu and Stern (1975), have pointed out that scale drift caused by a lag in updating standardization may have produced spuriously high scores. If this is true, corrections for scale drift would cause a gradual decline in test scores. Overall, results of the PSAT are probably inconclusive.[11]

Another general assessment of student performance, the National Assessment of Educational Progress (NAEP), charts progress in ten subject areas for 9-, 13-, and 17- year olds. Results of the tests are mixed, but a general pattern of decline

in student performance seems evident. Between 1970 and 1973, the performance of 9- and 13- year olds declined on two thirds of the test sections. Larger declines occurred in the achievement of 17 year olds taking the examination. An interesting development has taken place in the test's measurement of high school verbal skills. While reading abilities of 17 year olds seem to have increased, writing achievement has declined. The proportion of very good writers increased slightly but was more than offset by declines in the ability levels of average and poor writers.[12]

The Comprehensive Tests of Basic Skills (CTBS) also assesses the performance of elementary and secondary students. Progress of those enrolled in grades 2 through ten is measured. Recent administrations of these tests have revealed small gains in the achievement of students in grades 2, 3, and 4. Losses, widening with each increasing grade level, marked grades 5 through 10. Both the results of the CTBS and those of the NAEP localize the bulk of the decline in student achievement at the middle and high school levels.[13]

The pattern of lessened pupil performance is further delineated in such standard examinations as the Iowa Tests of Basic Skills (ITBS), the Iowa Tests of Educational Development (ITED), and the Minnesota Scholastic Aptitude Test (MSAT). The ITBS, somewhat similar to the CTBS, indicates a downward trend in scores through the fourth grade. In later grades, scores seem to stabilize. The decline appears to occur in both verbal and mathematical areas, although the trend in the latter area is a bit more pronounced.[14] Tested achievement on the ITED verbal, mathematics, and natural science scores has declined. The latter finding contradicts trends in ACT natural science scores, which remained constant during the period. Again, the decline is most pronounced in the higher grade levels. The most recent administration of the tests revealed a particularly large drop in the achievement of 9th readers.[15] Mean scores obtained from the MSAT also reveal a downward trend, spread over the last decade. Between 1959 and 1964, the Minnesota examination recorded substantial increases in student achievement. Between 1965 and 1966 an initial, a large drop was

recorded. A two year period of stabilization followed. Since 1969, mean scores on the examination have consistently fallen.[16]

Beyond all of the various national and state tests of ability and achievement, the Stanford-Binet Intelligence Test has continued to sample individual performance. The Stanford Binet result covering recent years are of particular interest. In a comparison of the performance of preschoolers, 10 year olds, and adolescents from the early 1930's with a similar group, tested in 1972, small increases were noted in the areas sampled by the test. Preschoolers scored, on the average, 10 points higher; Ten year olds averaged 2 points higher; and Adolescents rated six points higher. A comparison of the scores of the 1972 pre-schoolers with the scores of the same individuals three years later, however, revealed a 3 point decline.[17]

From this mosaic of tests and measures, a distinct pattern seems to emerge. Beginning in the mid nineteen sixties, and continuing to the present time, student performance on a wide range of standardized tests has declined. The downward trend has held over the full spectrum of academic subject and geographic areas in different degrees. However, elementary student achievement seems to be holding its own or increasing. Yet, the further into secondary education the analysis proceeds, the more drastic the declines. The pattern of falling tests scores, while by no means universal, is nevertheless widespread and pervasive.

It has often been justifiably noted that standardized test scores comprise but one indicator of student performance. Research indicates that the best predictor of collegiate academic performance is the high school academic record. The National Association of Secondary School Principals and the American Association of Collegiate Registrars and Admissions Officers have both recommended that uniform standards for computing grade point averages be instituted. Such procedures would then allow researchers to determine longitudinal trends of school grades or marks as they have determined the trends of standardized tests such as the SAT and ACT.[18]

It is interesting to note that, while standardized test scores have dropped, both high school and college grades have risen. This so-called grade inflation implies that student achievement is consistently improving, rather than worsening. It suggests that students are acquiring better and better skills, rather than becoming poorer in achievement.[19] Reconciliation of the two differing messages is all but impossible. Analysis of a number of factors which may have produced the two sets of results may help clarify the matter.

One of the least complicated explanations of the decline in test scores blames the examinations themselves. The claim is made that test-directing agencies such as the College Board are forcing their notions of what are valid measures of achievement upon all of us. One must view these critics with some suspicion, however.[20]

We should bear in mind the practices of ancient near eastern despots who would greet a messenger bearing ill tidings with death, and one bearing good news with rewards. The feelings brought about by the bad reports are understandable, yet one must question the reasoning in slaying the bearer! With consternation, we read that the National Council of English Teachers (NCTE), at its annual convention in San Diego, has called for an end to standardized tests. NCTE members claimed that the tests did not measure creativity; that they are racially biased; and that they have not adapted to changes in usage.[21] Many of the criticisms have some basis in fact. Yet, can any test really measure creativity? Are not all English tests inherently biased in favor of that which is Anglo-Saxon? Should standardized tests be expected to pick up many of the slang nuances of the language? One wonders why such criticisms were not leveled a decade ago, before the substantial decline in test scores. One AFT official has suggested that teachers should quit trying to eliminate examinations and instead attempt to educate the public about the tests.

It seems that the NCTE and others have fallen for the all-too enticing alternative of killing the messenger rather than meeting the problem head on. It should be noted that standardized tests do not stand alone as the only indicators of a decline in student

verbal abilities. There must be some reason why established schools of journalism such as those at the Universities of Missouri and North Carolina have found it necessary to institute remedial English programs for incoming students, when no such curricula were previously necessary. These facts suggest that the recent prevalent rise in course grades may be more inflation than substance.

Standardized tests, while far from infallible, do seem to be a fairly objective measure against which the longitudinal progress of our educational efforts can be judged. In a society imbued with change, they form a criterion which can be used to evaluate the worth of our various experiements.[22]

If one accepts at least the possibility that part of the decline in standardized test scores is not the fault of the tests themselves, one must survey a number of alternative explanations of the pattern. Among the most basic explanations which have been put forth is a genetic one. A State University of New York Professor has suggested that experts concerned over the fall in scores should not reject the chance that a genetic influence might be involved. In a study involving the performance of alarge sample of twins on the National Merit Scholarship Qualifying Test, SUNY Buffalo's Robert Nichols has suggested that environmental factors may be getting too much emphasis as effectors of human behavior patterns. Nichols noted that individual differences are due as much to genetic patterns as to situational factors. He claimed that, in recent years, psychologists and educators have seemed to place most of their emphasis on environmental influences. The result, he noted has worked to cloud the role of other factors. Nichols stated that, since intelligence likely has the highest heritability of any psychological trait, the decline in scores might be tied to a national drop in intelligence levels. He suggested that the advent of oral contraceptives and increasing fertility may have altered the correlation of intelligence with fertility.[23]

Nichols' work did not establish a definitive link between genetic factors and test scores, yet it pointed up the need for further research on the subject. Any consideration of this issue should not exclude the possibility that the problem may have

its roots in those bearers of the core secrets of our species, human genes.

It is also logical that any analysis of the reasons behind the drops in standardized test scores should focus on the actual populations sampled by the examinations. It is well known that American society has undergone tremendous changes during the last two decades. New educational opportunities have been opened to a number of groups, even, in some cases, to the stated exclusion of the rest of the population. Our courts are currently discussing the merits of some of these practices, yet our educational system has already borne the impact of their emergence.

The influence of non-environmental factors, such as genetics, on the pattern of standardized test scores is only beginning to be investigated. The connection between situational - environmental factors and the results, has already been extensively researched.

Much of the contextual change associated with standardized testing stems from increases in the sheer numbers of those taking examinations. Almost two million students graduated from American high schools in 1960. Of those, about 564,000 took the SAT. A decade later, around three million were graduating, yet the number of SAT takers had tripled! Some of the increase in participation in the examination may be attributed to population growth. The 1960's were the years when the post-World War II "baby boom" reached college age. Another important component of the 1960's was the dramatic growth in the numbers of those completing secondary education and matriculating at post secondary levels. The fraction of the adolescent population which remained in school through the 12th grade shot upward from one half in 1952, to two thirds in 1964, to three fourths in 1970. In like manner, the proportion going beyond high school to colleges and universities rose from one fourth in 1952, to one third in 1964, to one half by the early 1970's.[24]

The implications of these population trends for standardized test scores are not especially difficult to fathom. As percentages of high school classes moving on to college increased, proportions of students with comparatively lower high school

grade point averages also rose. Particular aspects of this trend are especially noteworthy. A study conducted by the College Entrance Examination Board (1972) revealed a decline in reading comprehension scores for almost every subgroup of the larger population examined. The drop in reading ability ranged across such diverse groups as children from low socio-economic level families, only children, individuals with many siblings, non-college bound students, and college preparatory students.[25] Clearly, reading is one of the key elements of any educational process. A lessened ability to read translates into difficulty in absorbing any number of types of knowledge. By bringing larger numbers of poor readers into the system, demographic patterns have thus contributed to the decline in scores.

Other population changes have also influenced changes in performance on standardized examinations. Sex sterotyping has had its impact. Women traditionally score lower than men on quantitative portions of almost all of the established tests. Ingrained patterns of sexual specialization in various fields appear to be still with us.[26] During recent years, statistics concerning some standardized tests, most notably the SAT, reveal that the female proportion of test takers has risen and that female performance has dropped at a greater rate than has male performance.[27]

Greater percentages of non-white groups are also now taking college entrance examinations. Consistent patterns of low mean performances on the tests by such groups, when combined with their increased participation have also influenced the trend toward lower scores.[28]

Colleges themselves have contributed to certain demographic influences on test results. In some cases, through early admissions programs, universities have skimmed off, as it were, the very best students before they even take the examinations. The widespread lowering of admissions standards in higher education has encouraged students of lesser ability to complete their secondary programs and subsequently continue their educations.[29] The opening of various alternatives to selective four year institutions, in the form of vocational campuses, two year colleges, and other special programs has also brought individuals of lower high school performance into

SAT and other test centers.[30]

The impact of various other demographic factors has also been probed. Age differences between recent examination participants and earlier test takers have been analyzed. Changes in the education levels of parents and family situations have been scrutinized at length.[31]

Demographic factors must have influenced the pattern of lowered standardized test scores. Yet, the impact of these elements may be overestimated. While higher percentages of individuals of lower ability are taking the examinations, the performance of all groups on reading comprehension portions of the SAT has fallen. Children of wealthy families and only children, as well as individuals of low socio-economic status and those with large numbers of siblings, are performing below previous levels.[32]

Connections between lowered scores and the increased participation of women, non-whites, and other groups may also be spurious. Such factors can account for no more than 5 or 6 points of the total decline. The bulk of the increase in the participation of such groups also seems to have occurred in the pre 1973 period. Yet, some of the greatest declines in test scores punctuated the 1974-75 interval, when the effect of the influx should have been dissipating.[33] Investigations of the impact on test scores of such factors as age, parent educational levels, and family situations have failed to establish significant results.[34]

Changes in the composition of test taking populations has certainly contributed to the drop in performance on standardized tests. Concern for the influence of these factors need not, however, lead to overemphasis. It is estimated that somewhere between 40 and 50 percent of the decline in SAT scores, occurring between 1963 and 1970, may be attributed to compositional shifts within the test-taking groups.[35]

Technological change has paralleled demographic change in altering the American way of life during the past two decades. Accordingly, the influence of this factor might be investigated. Ordinarily, a rising level of technical expertise in a society would enhance educational attainment. The test scores seem to contradict this notion.

One explanation for this paradox might be found in one of the more popularized products of modern technology, television. By age 16, most children have spent somewhere between 10,000 and 15,000 hours watching television. Between 1960 and 1970, the average time per child per day increased by about one hour.[36] Research concerning the connection between hours spent viewing television and test performance has not been conclusive. Studies conducted in Evanston, Illinois and Tokyo, Japan have established some relationships, yet these connections have weakened when the influence of other factors was taken into account.[37] Other hypotheses remain to be tested.

It does seem, reasonable, however, that amounts of time devoted by students to television seriously detract from time which might be spent studying, reading, or engaging in other learning experiences. Additionally, the viewing of television itself becomes a passive function. The child is bombarded by stimuli and is in no way required to react. Most of these stimuli are extreme or unusual in nature in order to hold viewer interest. The student is presented with an alternative to homework. Usually television is the winner.

If television has altered the environment of students outside school, other factors such as " watered down" curriculum have combined to change the educational process during the period of decline in standardized test scores. In a recent study, using data collected by the National Center for Education Statistics, Harnischfeger and Wilet reported that in the period 1971-1973, enrollments in English classes for grades 7-12 dropped over 10 percent. The proportion taking advanced English classes fell by one half.[39] Other studies have produced similar conclusions. In California it was found that between 1971-72 and 1974-75, enrollment in basic English courses dropped 19 percent while in classes in English composition enrollment fell 77 percent.[40]

In addition to plummeting participation in core English courses, basic courses which have normally been part of college preparatory sequences, such as Algebra, Foreign Languages, Chemistry, and Physics have also shared the same fate.[41]

Generally, these declines in basic course enrollments have been balanced by increased utilization of courses not previously taught in high schools. In some cases, these classes have covered material usually reserved for higher education instruction, including calculus, political science, and advanced literature. In other instances, non-traditional subjects such as arts and crafts have been incorporated into the curriculum. In still other situations, courses with direct vocational applications such as auto repair, expanded home economics, and retailing have been created.[42]

The influences of these curriculum changes on standardized test scores has been well-documented. Less emphasis on traditional courses has contributed to lower scores on the examinations. Some have declared that if curriculum broadening has occurred at the price of examination score declines, the goal is worth the price. Others have even suggested that courses in examsmanship, prescribed instruction in taking the ACT, SAT, be implemented.[43]

The arguments are striking, yet of questionable merit. The philosophy of doing one's own thing, the elevation of the importance of area of human endeavor, grew out of the 1960's. In its purest form, it is admirable. At the same time, however, these ideas should not cause us to teach every interest within the secondary curriculum. The core curriculum must inculcate the <u>essential</u> skills and traditions of civilization. Only when the essentials are firmly in place can examination of other fields properly begin. The temptation to instruct the popular and the readily applicable is great, yet nothing can be so basic and applicable as the fundamentals of language and analysis. Basics must come first. Writing itself, in the words of one author, is "thinking's sternest discipline."[44]

It is educational mania to make everything a course. Some subjects must remain outside the high school curriculum. Many interest area subjects can be covered in clubs or special classes. Instructors can be procured from local universities, repair-shops, or households as the case might be, and those with particular interest invited to attend. Bringing such subjects into the core curriculum weakens instruction in basic skills. It also fosters the illusion that diversity is more valuable than quality,

that the greater the range, the greater the value. The relationship between the decline in standardized test scores and curriculum changes is an important one. It tells much about the misdirection of our educational systems.

Other aspects of the classroom situation might be connected with the fall in test scores. Considerable attention has been called to the decline in the numbers of student-teacher contact hours. In some respects, this pattern has resulted from increased permissiveness and laxness of discipline in the school. During recent years, for example, absence rates have greatly risen in districts throughout the nation. No longer intimidated by possible disciplinary action, school attendance has become more of an occasional than a regular pattern.[45] Not all of the patterns which have reduced numbers of teacher-student contact hours are due to increases in absence rates. The rise of indirect methods of teaching has also reduced direct instruction time. In their proper places, indirect tools of instruction such as filmstrips, movies, and library research work supplement direct teaching by reinforcing points learned in class and by broadening the range of subject knowledge. In their worst applications, such tools become means to free instructors, from the labors of lesson preparation and face to face instruction, as well as entertain students and thus increase teacher popularity. The role of the collective bargaining movement in reducing student-teacher contact hours is also not to be discounted. Strikes and union negotiations have reduced numbers of teaching hours required.[46] Other general societal problems, such as racial desegregation and the energy crisis, have further reduced direct teaching.[47]

Together, the rise in absence rates, an increase in indirect teaching, the collective bargaining movement, as well as other factors have progressively limited the amounts of time devoted to face to face instruction. The decrease in this crucial factor may well have lowered student performance as evidenced by falling scores on standardized tests. " Time", as one authority in the field has stated, " is still the central variable in teaching".[48]

Personnel qualifications comprise yet another aspect of the learning environment which has been scrutinized for possible connection to the drop in examination scores.

Analyses have found that gradually increasing levels of teacher education paralleled the decline in examination mean scores. It seems improbable that rises in teacher training produced such worsening outcomes. Yet it also appears true that graduate education of teachers does not improve the success of these individuals in the classroom.[49]

The general range of factors which, in one way or another, has been connected with the decline in scores on standardized tests has been summarized here. Each of these factors merits consideration and examination in its own right. Yet in combination, these diverse elements also form a pattern which should provoke considerable thought and discussion.

Part of the decline may be due to the impact of genetic factors. This connection remains to be investigated. Another portion has resulted from the influence of changes in test taking populations. Most of this effect presumably occurred in the 1963-70 period. The sizable remaining part of the decline is doubtlessly connected with changes in the contemporary setting. Basically, a weakening of established curricula, along with lessened numbers of student-teacher contact hours appears to have eroded student performance in a wide range of areas of learning.

In one sense. the problems surrounding the test scores seems to reflect a change in the philosophy of American teaching and perhaps of education in general. Rather than to blame the tests for all of our problems, rather than to argue that the examinations are too rigid or that they weaken rather than broaden learning, we should admit that the fault is not with the tests, but that it is with contemporary American educational society. Within many of the factors described above can be seen the elements of a changing outlook, a new philosophy. The society as well as the educational system has moved toward a passive mode rather than an active one. It waits to be influenced rather than itself reaching out to influence.

Technological aspects of this pattern crystallize in the form of television. From their early years, our youth learn that this medium will stimulate with the mere twist of a channel selector. Television supplies the words and picture. No reaction is

required.

This same passive mode has moved beyond our living rooms and into our schools. Students have left the difficult courses, those which require extended practice and mastery, for easier, exploratory offerings. In so doing, they have tackled peripheral areas without completing the core of their educations. Teachers have failed to stem this most dangerous tide. Indeed, many of their patterns of conduct have contributed to the pattern. Unreasonably high use of slides and filmstrips promotes the same lack of active learning engendered by television. Emphases on what is easy and fun to do in the classroom obscures the fact that much of the learning process must be arduous.

Activity and the ability to shape one's environment can be learned. Yet, this requires learning activities which are demanding enough to provoke creativity rather than mere recognition. Selecting the best answer is not enough. The process in solving the answer must be emphasized. Only this type of discipline will produce students who grasp concepts and succeed, rather than become intimidated by standardized tests.

Allied to this retreat from active pattern of learnings has been a pullback from educational requirements . By emphasizing the merits of doing one's own thing many educators have rejected the application of instructional standards. Such individuals have labeled the SAT, ACT, and other examinations as sterile and rigid. Perhaps some of these charges are true and test improvements can be made. Nevertheless, it is necessary to measure basic achievement skill acquisition.

We must not permit judicious reexaminations of traditional assumptions to evolve into a full blown, paranoic retreat from reality. Critics of the tests have blamed them for almost everything under the sun. They charge that the examinations determine school curricula. If they do, then why is this same curriculum resulting in lower test scores? They argue that the tests make decisions for us. It is the examinations which have dictated that the scores should be progressively lower? They claim that the tests don't measure important analytical skills. Is it possible

they have not consulted the reading comprehension or mathematical problems sections of the SAT?[50]

Having failed to hammer home their criticisms with these flimsy arguments, opponents of the tests backtrack and begin to espouse psychological arguments. They point out that too much fear of testing exists in society. They claim that pressures on youth are too great, that excessive inducement to succeed among young people has led to lower examination scores.[51]

Again, the critics may be well intentioned, but their points are scarcely tenable. No society can function without some sort of testing. Even when reduced to his primordial relationship with nature, man is tested by the elements. True, youth are bombarded by all sorts of pressures, but learning to deal with these problems, rather than retreating from them, contributes to mature development. Tests come in all forms and at all times. The SAT and its kind are intended to help rather than to harass youth.

Accordingly, then, the decline in standardized test scores seems to correspond to a change in the philosophy of our society a trend toward the passive and easy. Graphic proof of this can be seen in the reaction of some educators to the results of the 1976-77 administration of the SAT's. Commenting on the apparent arresting of the decade long drop in mean scores, one authority declared the stabilization of test means to be cause for rejoicing.[52] In so stating he overlooked the fact that scores had been stabilized at levels far below those of the mid - 1960's and that concerted, active efforts are now required to recoup these losses.

How may we reverse the pattern of lower student performance? Many would suggest increased spending for education although rising expenditures failed to prevent the problem. Nothing would lead us to assume that test scores can be floated on a sea of money. Improved management might be another alternative. Again, however, the limitations are obvious. Collective bargaining agreements and established curricula are not easily revised.

Although change will be difficult, initial moves should soon be made. Alterations

need to be made in all parts of teaching. The start can be at home. Parents must turn off the radio and the television. They need to set aside times when homework should be done. No one can make the student learn, yet positive attitudes toward education can be shaped and developed by parents who set good examples.[53]

Changes also need to be made by educators. Curricula should not be expanded unnecessarily. New offerings should be selected carefully and supported by a strong program in English and mathematics. Teaching for mastery of subject matter rather than diversity or popularity of courses should be stressed. If extensive repetition and rote memorization is required for mastery of reading, writing, and quantitative skills, better that such activities take place within the educational system than be left undone.[54] Responsibilities not fulfilled by education result in unemployment, psychiatric disorders, and other problems for which the society as a whole must later pay.

Clearly, the message of declining standardized test scores is not a pleasant one. Yet neither is it one to be ignored or to be rejected as an illusion. A new task in American education is waiting. The task can only be accomplished if we realize the nature of our present position.

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KINDERGARTEN IN AMERICAN EDUCATION:
A DISCUSSION OF CURRENT QUESTIONS

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One important controversy currently shaping American education concerns the dimensions and purposes of kindergarten. Traditionally, kindergarten, the very first institutional learning experience, evolved from a peripheral adjunct of the primary grades into a significant element of the entire learning continuum.

Any attempt to understand the complexities of the current debate surrounding kindergarten must include an examination of its history. Through such an analysis, previous patterns of early childhood education can be delineated and future ones projected. The origins of kindergarten are well-defined and documented.

Friedrich Froebel, a German educator, created the institution out of a desire to educate the whole child: physically, morally, and intellectually. He established his first kindergarten in 1837 at Blankenburg in Southern Germany. Froebel constructed the name for his program by combining the words kinder - child, and garten - garden or recreational area. Clearly, he did not plan his program as a structured classroom regimen.[1]

However, Froebel did not see kindergarten as only an arena for unstructured play. Children were encouraged to explore along predetermined programs. They were invited to experience the complexity and diversity of their world, to see the relation of parts to their respective wholes.[2] In his observations of young children, Froebel became especially aware of two points concerning this group: the significance of play in their learning processes, and progression in understanding from the concrete to abstract. These two points became guiding principles in the early German kindergartens.[3]

In their evolution during the nineteenth century, the German kindergartens were influenced by the principles of the great Italian physician and educator, Madame Montessori. Montessori believed that the scope and content of early childhood programs should differ from that of traditional primary school programs. She argued that pre school activities should be guided rather than rigidly prescribed. Agreeing with Froebel that the principle value of kindergarten lay in its role as an extension of the home, Montessori reasoned that the dimensions and content of the institution should not be unnecessarily expanded.[4] The Italian thinker believed that the kindergarten supervisor should be a director, rather than a teacher, coordinating and guiding children in the use of various apparatus rather than inculcating a fixed body of knowledge.

Shortly before the death of Friedrich Froebel, in 1852, kindergartens were banned in much of Germany. The seemingly innocuous institution fell victim to the tides of revolution and reaction which swept central Europe during the mid-nineteenth century. Many of the refugees which left the area for the Americas during this period brought with them the ideas of Froebel and Montessori. Among them was the German intellectual Carl Schurz. Upon arriving in Wisconsin during 1849, Schurz and his wife furnished the impetus for a number of pre-school programs. Mrs. Schurz established a kindergarten program in Watertown, Wisconsin so that her daughter might benefit from the same type of early childhood education which had been available in Europe. Others soon followed the Schurz model and began establishing kindergarten programs. Caroline Frankenberg, a teacher who had studied with Friedrich Froebel in Germany, set up a private, German-language program in Columbus, Ohio in 1858. An English-language kindergarten was developed in Boston around 1860 by Elizabeth Peabody.[5]

During the eighteen sixties and seventies, a number of widely separated municipalities established kindergarten programs. Private efforts opened in Washington, D.C. and St. Louis. Public kindergartens arose in Los Angeles and Indianapolis. By 1880 there were a total of four hundred kindergartens scattered through thirty states. By the turn of the century, two hundred communities had developed these early childhood programs as part of their educational continuum.[6]

The growth of the kindergarten movement continued during the twentieth century. By 1914, over seven thousand of the programs were in operation. During the two decades which followed, that figure doubled. The proportion of pre school age children enrolled in kindergarten programs also rose sharply, growing from one quarter in 1925, to one half in 1950 to almost two thirds by the 1970's.[7]

The growth of the numbers children involved in kindergarten programs during the nineteenth and twentieth centuries was paralleled by an evolution of the content of these experiences. Maria Montessori and her disciples continued to turn out a variety of innovations. Some, such as solid geometric forms which aid children in the development of spatial concepts, were readily adopted by programs in the United States. In 1914 Caroline Pratt opened a pre school program for slum children in New York City, utilizing a discovery approach to learning similar to that developed by Friedrich Froebel in Germany. During the 1920's, rapid evolution in the study of child development also influenced the progress of kindergartens. Psychologists were drawn in Froebel's emphasis on social and emotional, as well as intellectual factors, in the development of children. Interest in early childhood experiences, generated by Freudian analysis, also brought increased attention to the kindergarten movement. Behavioral psychologists also began to investigate pre school education.

Believing that the development of social and physical habits was set by the establishment of routines during early childhood, these individuals saw kindergartens as means for solving various problems. The behavioralists established kindergartens with tightly structured routines, hoping to eliminate undesirable behaviors from adults by deleting them from the daily routines of children.[8]

The influence of the behavioralists effectively structured many kindergarten programs, phasing out much of the free play and self expression inherent in earlier efforts. Although local variations existed, the more rigid, behavioral approach was the guiding principle in most American kindergartens through the years of the depression and World War II. During the late 1940's, however, a new emphasis on less structured programs emerged. Behavioral approaches were challenged as overly rigid. Emphasis on creativity and discovery was once again introduced into the kindergarten curriculum. The United States, after adopting pre school education, had experimented with a wide range of variants of the concept.[9]

The coming of the nineteen sixties brought new developments to the kindergarten arena. Stimulated by the supposed superiority of Russian over American technology demonstrated by the launch of Suputnik, American hurriedly devoted massive amounts of money, time, and energy to education in order to "catch up" with the Soviets. Early childhood programs felt the influence of this new impetus. Structured academic activities came to dominate many kindergarten programs. Experimental preschools which concentrated on the learning of academic subjects were funded by the Ford Foundation.[10] The work of Swiss psychologist Jean Piaget, received special attention. Piaget had concentrated on the cognitive development of the young child, beginning with the formation of simple responses and proceeding to the

formation of abstract concepts. His ideas were seized upon by those who wished to integrate academic learning into the kindergarten curriculum. Stimulated by Sputnik and justified by Piaget, pre school education thus evolved, from a transitional program linking home and school, to an intensive effort designed to prime children for more rigorous educational endeavors. [11]

International and technological issues wrought profound changes in the development of kindergarten during the nineteen sixties. During the same decade, social forces also combined to challenge many of the concepts which underlay pre-school education. As the years of comparative domestic calm which had marked the nineteen fifties became the times of social upheavel which were the sixties, kindergartens also felt the impact of new tides within American civilization. Preschool education became caught up in a searching American self-examination. Kindergartens, as well as education in general, began to be seen as tools for social, as well as individual improvement. Project Headstart was initiated as a preschool experience which would give low income children primary educational experiences equal to those of other young people. Various ethnic and minority children became the objects of a range of programs designed to provide equal educational opportunities for all segments of the society. Interest in day care for kindergarten and pre-kindergarten aged children underwent dramatic growth. It was hoped that such programs could provide care for children of working parents, and expecially aid one parent families. [12]

The approaches to education inspired by Sputnik and the social problems of the nineteen sixties had a tremendous impact on the development of kindergarten programs. During the nineteen fifties, the structuring and rigidizing of kindergarten programs, brought

about by the behavioralists, had gradually been reversed. Emphasis was once more placed on Froebel's development of the whole child in an environment which was an extension of the home. The American reaction to Sputnik interrupted this trend, however, forcing a number of academic subjects into the pre school curriculum. Technological "catching up" seemed to necessitate the packing of every available bit of subject matter into primary schooling. As a result, the kindergarten subject matter began to resemble that of first and second grades. In many communities, pre school instruction became a first experience with high intensity education rather than an extension of the home. Social pressures further distorted the original mission of the kindergarten.

As large segments of the American population began to see education as an answer to society's problems, pre school experiences also became a tool for liberating mothers from household responsibilities and correcting age old economic problems as much as arenas for the development of the child's personality, emotions, and cognitive abilities. The drastic growth in the scope of pre school programs greatly expanded what had been the domain of the kindergarten. Nursery schools and other day care services arose, serving children ranging from toddlers to early grade school pupils. Kindergartens became surrounded by a variety of pre school programs, many supposedly essential to the progression of human development. While the academic additions to pre school stimulated by Sputnik effectively cluttered the kindergarten curriculum, the effects of the various social programs acted to alter the original mission of the program. Pre school experiences became substitutes for rather than extensions of the home. The focus of education turned as much to

the parent who needed to be liberated from the responsibilities of child care, as to the child in need of proper cognitive, emotional, and social development. Enlarged out of its previous proportion, pre school education was called upon to perform a wide variety of functions for which it was never designed.

The years since the nineteen sixties have provided an interval during which the numerous innovations in early childhood education which have appeared on the scene might be digested and evaluated. Beating the Soviets to the moon, concluded an era of social turmoil, and America began to take a critical look at the many programs which emerged during the sixties, a situation which produced a major controversy in the area of preschool education.

Many individuals, wishing to carry on what they believe to be the worthwhile developments of that decade, have sought to expand both the role and the scope of the kindergarten. Others, calling attention to what they see as deviations from the traditional mission of the concept, have cautioned against such action.[13]

Proponents of an expanded role for kindergarten have raised a number of interesting points. They have claimed that the times favor the expansion of kindergarten into some sort of wide ranging day care movement. They note that the proportion of working American mothers has quadrupled since 1940. Like the social reformers of the nineteen sixties, they argue that an expanded kindergarten program could help alleviate societal problems while also caring for the interests of children.[14]

Advocates of expanding the dimensions of kindergarten also point out that such a movement would contribute to an increase in the significance of human values. E. Robert LaCrosse, a child psychologist, has claimed that an expansion of the creative and play aspects

of modern preschool programs would help counteract the regimentation brought to kindergarten by the effects of Sputnik. LaCrosse and his colleagues have argued that the best way to humanize pre school programs is to expand them. [15]

Child psychologists have also pointed out that various physiological and emotional facts of human development justify an increased emphasis on the preschool years. They have noted that a major portion of the physical, emotional, and cognitive growth of a child occurs during the time before entry into grade one. They claim that half day kindergarten alone is not enough to aid the individual in developing his or her maximum potential during this period. Only through a well developed and widely implemented day care program, it is argued, can the needs of individuals in this age range be adequately served. [16]

Allied to this point is the argument, made by many proponents of expanded kindergarten programs, that extensive preschool programs could more quickly identify specific areas in which young children have difficulty. Provision could then be made for corrective action at a time when such problems were still in their formative stages. Burton L. White of Harvard University has urged his implementation of an early detection effort to identify learning difficulties in young children. White has further proposed that this program be paralleled by a massive movement aimed at educating parents about the needs of younger children. Quick and direct action at this early stage in child development, he has claimed, could eliminate many problems. [17]

Advocates of expansion of existing preschool programs generally agree that the best arena for such a trend is the public schools. They point to the nineteen sixties as a period characterized by

the haphazard development of large numbers of early childhood education programs. They note that many useful concepts were evolved during that decade, but argue that the time has arrived for a systematization of pre school education.

A principle thinker in this area, Urie Bronfenbrenner of Cornell University, has cautioned that a pluralistic day care program, haphazardly developed, might insulate children from the real world. Bronfenbrenner has recommended that expanded kindergarten and other early childhood programs be implemented in the public schools at the earliest possible time. He has urged that these programs become "integral parts" of the larger curriculum.[18]

Bronfenbrenner and many proponents of expanded kindergarten experiences have argued that the implementation of such programs in the public schools may be crucial to the ultimate success or failure of the pre school movement. They claim that the present, pluralistic system of early childhood education can provide neither the range nor the quality to make for successful child development. Only through a massive, publicly administered program, they argue, can the preschool movement truly promote the development of the whole child. [19]

At the present time, advocates of expanded kindergarten are increasingly assuming a defensive posture. Having witnessed the gains made by preschool education during the nineteen sixties, they are mobilizing to cement their movement by including early childhood programs in the public schools immediately. The rhetoric of this group testifies to this sense of urgency. The National Association for the Education of Young Children (NAEYC), at a recent meeting, has cautioned that "negative forces at work in the field of early childhood education are threatening its very existence".[20]

NAEYC spokesmen have argued that further research in this area will only serve to delay the implementation of necessary programs. Other members of the group have declared that "it's time to quit studying and start acting".[21] Marion Wright Edelman, Director of the Harvard University Center for Law and Education, has urged proponents of early childhood education to quit wasting time answering critics of the movement.[22]

The rhetoric of the NAEYC and other groups would make it appear that dark, sinister forces are threatening the education of America's youngest children. Actually, this is far from the case. Opposition to expanded preschool programs is scattered, united only by the substance of its positions. Indeed, if there are any "forces" at work in the debate over early childhood education, they are on the side favoring the expansion of such programs. Almost all of the organizations which have taken positions on this issue have backed expanded pre school experiences. In addition to NAEYC, the Council of Chief State School Officers (CCSSO), the American Federation of Teachers (AFT), and the American Association of School Administrators, (AASA), have adopted stances favoring expanded kindergarten and other early childhood programs.[23]

Opposition to wholesale enlargement of existing preschool curricula has emerged from a variety of sources, most of which are educators who have raised various worthwhile points. Because these individuals are not organized, they do not speak with a unified voice. Nevertheless, their opinions are perceptive and often insightful.

Although not so tightly organized as proponents of expanded preschool programs, critics of these efforts do exist in considerable numbers. A recent Gallup Poll revealed that only 32% of the American population favored expanding preschool education. A sample

of 14,000 school administrators showed that a whopping 75% opposed such programs. Most of this group thought that separating young children from their mothers and exposing them to prolonged classroom experiences would be especially damaging. [24]

Very few of those who object to the wholesale expansion of preschool programs have questioned the value of such education. Raymond and Dennis Moore, two of the most notable voices in this area, have concluded that a number of fields exist in which pre school programs are necessary. The Moores have pointed out that young children with severe sensory and visual impairments may need expanded institutional care. Individuals with extreme emotional problems may also require increased professional help in a setting outside the home. The Moores have also endorsed traditional kindergarten experiences as necessary for the development of the young child. Such efforts, they contend, serve as an effective bridge between the developing youngster and the larger society. [25]

Far from attempting to undermine the structure of pre school education, opponents of the current push for expanded instruction are attempting to affirm traditional approaches to such programs. In many cases, the Moores and other educators are conducting a critical examination of the additions to kindergarten which have arisen since 1950, with the aim of keeping what is worthwhile and discarding the rest.

Among the major objections raised concerning expanded preschool has been the contention that such efforts would replace, rather than extend the home. It has been pointed out that the early kindergartens of Friedrich Froebel were transitional institutions, which mediated between home and society, and thus aided the development of the individual child. While there is little merit in emulating

Froebel's efforts simply because they were the first, there is considerable value in considering them for their own worth. All early childhood experiences grow, in one way or another, out of a home environment. Any initial learning program must be closely tied to that base. [26]

A number of novel curricula have been constructed which take full advantage of the home and evolve childhood education philosophy from that framework. Tutoring programs which begin in the home have been implemented in some areas. Diagnostic testing to determine possible deficiency areas has also been carried out in non-institutional, home settings. Small, preschool classes have been introduced which meet at the houses of participating children on a rotating basis.[27] All of these efforts have attempted to use the home as a mediator in various schemes of individualized learning. In the public schools, where less money is available and more children must be cared for, the situation becomes more difficult. In this situation, the worth of half day kindergarten becomes readily apparent. Children are exposed to an extra-home environment but only for a limited period of time. Preschool education thus consumes a minority, rather than the majority of time in the child's day and thus allows ample room for home-centered activities. Parent involvement is facilitated because time exists for teacher-parent interaction during the day, rather than only in the evenings at occasional visitation nights. In short, a manageable time frame is delineated which allows for maximum teacher and parent, as well as child development. [28]

The case for shorter preschool programs is strengthened by the findings of recent psychological studies. This data has implied that young children need to spend increased amounts of time with

their mothers. The earlier work of Freud, which emphasized the significance of contact with parents during early childhood, has been reinforced by this latest research.

These findings have also added a new perspective to some of the contentions advanced by proponents of expanded kindergarten programs. Such individuals have argued that because a child develops half his ultimate intellectual capacity during the years before first grade, public schooling during this period is essential.. Psychological research has added a new dimension to this perspective, showing that emotional and other capacities undergo rapid evolution during the pre primary grade years. Under this new view, the best basic setting for total development becomes a home environment punctuated by contact with society.[29]

Evidence relating to the educational value of preschool programs also casts doubt on the worth of expanded early childhood experiences. It should be noted that ideas arising from research concerning kindergarten itself are inconclusive at best. Tests involving reading, quantitative, social and other abilities, have failed to demonstrate, on any sort of consistent basis, that children who attend kindergarten progress better than those who do not.[30] Evidence for differences in the performance of children attending various varieties of preschool programs is similarly inconclusive. Some tests of reading d mathematical have given the edge to those who have attended the longer sessions. Many others show no significant differences among the children.

Longitudinal studies, conducted with Head Start children, reveal that even those gains which are noted may be of a temporary nature. Children who received exposure to Head Start programs, and thus immediate, and intensive early childhood education, were tested

over prolonged periods. Results of the testing demonstrated that, although the Head Start children showed immediate gains, these individuals were overtaken by late starters after a period of a few years.[31]

The emphasis of early childhood education has changed from the intensive, academic one of the early nineteen sixties to one favoring the development of the whole child. Still, the effect of a laterally expanded kindergarten may be as detrimental as that of the vertically expanded one of the sixties. While the child of that decade was bombarded with reams of data, the child of today is often occupied by hours of time. If a home environment is the key to the early development of children, the latter practice may be as counterproductive as the former.

Opponents of expanded kindergarten and other programs have also advanced other cautions against hasty implementation of new curricula. They point out that a strong pre school program need not be carried on in the public schools. It should be remembered, they note, that American education has not developed in anything resembling a prescribed, preset pattern, but has instead evolved in a pluralistic fashion. Many of the United States' finest institutions of elementary, secondary, and higher learning remain under the control of private interests.[32] The pluralistic development of American education has encouraged a diversity of thought and also allowed a wide range of ideas to be subjected to the test of experience. This being the case, it is noted, the public institutionalization of expanded preschool education might actually harm the movement.

It is reasonable to suspect that most of those educational innovations which have survived in the United States should be those

which, when faced with existing conditions, served various needs and were therefore retained. Expanded preschool programs have been in existence for scarcely a decade, yet many proponents of them seem to be calling upon government to rescue and legitimize the early childhood educational experience. Viewed against the backdrop of the history of American society, the present cries of advocates of expanded kindergarten and other programs seem to be symptoms of difficulties within such efforts.

Another social concern which has been expressed regarding pre school programs relates to a general impulse toward collectivization and institutionalization which seems to be sweeping the society as a whole. The advent of day care itself, whatever the merits of the concept, was a development of a sort of collective parenthood. Admittedly, a number of causes of collectivization in our society have been largely unavoidable. The increase in size of the American population within a static land area and cost considerations in an economy permeated with inflation are two factors which have dictated that some functions must be performed by groups. Yet working in collective units at work and at play may be one thing, while collectivizing families is quite another. The family has traditionally been the source of the child's emotional nature, value orientation, and other traits. To cut the influence of the family is to, in the last analysis, remove some of the ethnic, incellectual, and spiritual pluralism which has become a hallmark of American society.[33]

It is also questionable whether a child can obtain the same sort of warmth, continuity, and security from a larger group that he or she can absorb from a family. The limits which expanded preschool places on the time for family interaction must inevitably force the young child to turn to his or her "other" environment for love,

stability, and protection.[34]

Institutionalization is another trend which has been linked to the development of the pre school movement. The past decade and a half has witnessed the absorption of a vast number of societal functions by governmental institutions within the United States. Public control has been extended over transportation facilities, health care, and natural resources in increasing degrees. Some of this movement is no doubt justified, yet much of it also appears to be unnecessary. College courses are now offered in areas which individuals previously learned through independent effort. It has been noted that preschool programs, which function and indeed flourish as private entities, now stand to be absorbed by a widening system of public day care. One cannot doubt that this would extend the present scope of preschool programs. Yet one must also conclude that it would curtail the diversity; increase the cost; and quite possibly lessen the quality of existing efforts. The bill for expanded kindergartens would have to be born by the taxpayer. This tab would be more than double the annual cost of existing half day programs, since additonal investment in capital equipment, as well as more teachers, would be required. The quality of extensive public pre school efforts, free of the pressure of competition brought about by the educational marketplace, might also be expected to decline. While perhaps partially arising out of worthwhile, conscious intentions, the drive toward public preschool programs might also spring from the unconscious movement toward institutionalization and collectivization.[35]

The cost factor .... involved in increased kindergarten and other pre school programming deserves consideration above and beyond that previously noted. Educators in California have calculated that an early childhood education program implemented there would have a per

child cost of between five and six hundred dollars. New York State educators, attempting to create a program which would reach "desirable standards" estimated that their effort would cost slightly less than two thousand dollars per child. It should not be implied that either one of these price tags is reasonable or exorbitant. It should be considered, however, that when weighed against the worth of expanded kindergarten curricula, both of them may be unnecessary. Available research does not seem to identify any important gain from full day kindergarten which would justify incurring these substantial additional costs. Few gains in specific learning areas have been attributed to the additional half day. Psychological problems may actually result from keeping children out of the home for such extended periods. Extended pre school programs definitely free parents from some of their daytime child care responsibilities. It remains to be seen whether individual school districts will see such advantages as offsetting the additional expenditures necessary for these programs.[36]

The range of arguments concerning extended preschool programs has been sketched here. It is probably true that the early childhood movement experienced drastic growth during the nineteen sixties and early nineteen seventies. The controversies which have developed recently surround not the viability of the concept of pre school education, but which elements of that concept should be winnowed out and which should be retained. Groups such as the NAEYC and the AFT have assumed extreme positions. They have claimed that expanded kindergarten programs should be implemented on a national basis at a time when over one third of the children in this country do not even attend half day kindergarten. Such organizations have also alleged that definite increases in learning skills are produced by full day programs when evidence concerning the worth of existing half and full

day programs is itself inconclusive.[37]

The positions of the opponents of expanded pre school curricula have also contained extreme elements. The arguments advanced by Raymond and Dennis Moore, which focus on a highly individualized learning environments may place too high a value of individualized learning. Classroom learning geared to the pace of individual achievement may indeed be beneficial to groups of children. The Moores also may have underestimated the societal value of liberating mothers and other parents from child caring responsibilities.[38]

One thoughtful exponent of a middle-of-the-road position in the early childhood education dispute, Edward Zigler, has advanced a number of points worthy of consideration. Zigler has concluded that expanded kindergarten and other pre school programs produce few gains in individual achievement over their half day counterparts. Even those gains which are produced, Zigler argues, disappear by the time the children involved reach the third grade. Zigler has also pointed out that expanded pre school programs might give mothers respite from the difficult task of child care and make the "quality of their mothering better during the (remaining) time which they do spend with their children." Zigler offers an interesting suggestion to those involved in the current controversy concerning early childhood education. He reasons that too much debate has been devoted to the extent of pre-school programs and too little to the quality of such experiences. He argues that good pre school programs can improve the quality of the lives of the children who participate and asks that more effort to be devoted to refining existing programs before wholesale expansion takes place.[39]

The debate surrounding early childhood education continues. Portions of it will likely touch most American school districts. Each

community will be forced to consider its own needs and their relation to possible programs. Within the East Syracuse-Minoa School District, experimentation in the pre school period has already taken place. Programs which have been implemented have dealt with day care children and their parents. An approach has been developed which focuses on family participation and child development within the context of the home.[40] Future developments in the District will depend on assessments of existing needs, cost analyses of new programs, and popular perceptions of the situation.

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PROMOTION VS. NON PROMOTION

A POLICY REVIEW

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Promotion vs. Non Promotion

A Policy Review

During recent years, the practice of retaining students in grade levels for additional time periods in order to correct academic difficulties has received renewed attention. Various organizations and individuals, frustrated at the inability of some youngsters to read, write, or perform basic mathematical operations, have turned to grade retention as a solution to these problems. Their efforts promise to have a considerable impact on American public education during the immediate future. Therefore, a reexamination of the semantics, history, and research surrounding the topic imperative is in order.[1]

Analysis of the meaning of grade retention is not a simple matter. The concept is one part of a host of expressions, each of which describes a separate practice. The term most easily defined is subject repetition, which is the completion of a single subject a second time in order to correct deficiencies encountered in the initial completion. Subject repetition is best suited to the middle and high school curricula where the curriculum is departmentalized. Repetition of a single subject is thus easily accomplished without interfering with the remainder of the program of study.

Subject repetition is similar to grade repetition. Grade repetition is the completion of a grade level a second time in order to correct deficiencies encountered during the initial enrollment. The practice is most often implemented in elementary grades, where division of subject matter is not accomplished as easily as

it is at middle and high school levels.

Grade retention is closely akin to grade repetition, since it connotes the completion of a grade more than one time. Yet retention carries with it a number of notions not contained in repetition. Repetition implies that the student actively performs the tasks associated with the curriculum a second time. Retention merely connotes that the individual is held back in the grade level; no notion of student effort is contained in the word. Repetition also defines the process by which th subject matter is treated, implying that the material is completed, piece by piece, a second time. When this work is finished, the student's repetition is over. Retention, however, has no such precise definition. It means that the individual is held back; the period, purpose, and structure of that holding back are not stipulated.[2]

An examination of the two terms and, more importantly, the real differences between them demonstrates that there are important issues other than semantics. Subject repetition, grade repetition, and grade retention are orthogonal educational practices implemented in the public schools. As such, they are not the same process to which different names have been applied. Thus, they may likely produce significantly different results. While subject repetition involves a single, academic area of interest, grade repetition involves an entire level of education. This level incorporates not only academic subject matter, but also psycho-social dimensions. Grade repetition thus implies a second experience of mental-physical-emotional, as well as intellectual development. Grade retention adds yet another factor - that of the individual remaining fixed at a given psycho-social, and academic level.

Examination of the historical and research bases of the various forms of retention and repetition demonstrates this importance. Grade retention and repetition originated in America in the nineteenth century public schools. As the graded school emerged, it became necessary for educators to provide some method of correcting academic deficiencies of students prior to graduation. Since, within rigid grading arrangements, it was impossible to remedy problems with subject material on a piecemeal basis, whole grades were ordered repeated.[3]

Subject repetition has a longer history. It was practiced in the medieval universities and in the schools of sixteenth and seventeenth century England, from which American education developed. In some cases, subject repetition became subsumed by movements toward grade retention and repetition during the rise of those trends during the nineteenth century.[4]

Grade repetition and retention, as well as subject repetition were all challenged during the nineteen thirties and forties by movement toward what is known today as social promotion of students. This trend had been largely brought about by advances in sociology and psychology which had occurred during the early twentieth century. During that period, a number of social scientists and educators had drawn attention to the special emotional and social needs of the developing child. They viewed child maturation as a continuum, which if interrupted, could result in severe emotional problems for the individual. The importance of the child's peer group began to be recognized as a significant reference area for the building of confidence and self-concept.[5]

Under the force of these developments, the educational management strategies of repetition were increasingly abandoned in most

American school systems. Tampering with the psycho-social development of children was judged to be harmful and not worth the small gains in intellectual development which it might purchase. Deficiencies in reading and mathematics, it was thought, could be remedied through remedial curricula, whereas a loss of contact with peer groups could create mental-social disorientation and lead to emotional imbalance.[6] Subject repetition has also been reduced because of the concerns for damage in the psycho-social domain, although the reduction in this practice was less than the reduction in grade retention and repetition.[7]

With the advent of the nineteen seventies, certain trends in American education renewed an interest in grade repetition and retention, as well as in subject repetition. Progessively lower student performance on standardized examinations reinforced a feeling in some quarters that school children were not learning as well as students had before in certain basic subject areas. This concern created interest in a number of old and new educational practices. Novel remedial programs, concentrating on basic academic skills, were implemented in many school districts. Cooperative efforts, involving coordination of teacher and parent approaches, were also devised. In some areas, grade repetition and retention were increasingly looked upon as solutions to existing difficulties. These practices, it was reasoned, were employed during the early twentieth century, a time when no marked student deficiencies in basic intellectual skills existed. Accordingly, it was believed by some that the reintroduction of retention and repetition might accompany a decline in the deficiencies.[8]

The efforts of those seeking to revive grade retention and

repetition while well intentioned, nevertheless deserve careful consideration. Historically, it should be kept in mind that the declines in student achievement on standardized examinations originated during the mid-nineteen sixties, while grade retention and repetition disappeared from the school curricula of most districts during the late nineteen thirties and early nineteen forties. The chronological basis for linking retention and repetition with academic achievement thus disappears. Were such a connection to exist, it might be based on coincidence rather than casual connection. The existence or absence of linkages between grade retention and repetition, and the achievement of students must be demonstrated through research. Only through an analysis of studies connected with the subject may perception of the worth of retention and repetition be gained.

Much of the data relating to the effects of retention and repetition on students concerns the effects upon their emotional development. In a 1972 survey of elementary pupils, Kinnard White and James Lee found that failure to be promoted was associated with negative self-concepts among children. The differences between repetition and retention were also underlined by the investigators. White and Lee found that students retained for more than single year had more negative self-concepts than those who were required to repeat grades only once.[9]

In another survey of elementary school pupils, conducted in 1971, Ernestine Godfrey also found that the retention of students had detrimental effects on student self-concepts and attitudes. Godfrey also discovered, in her investigations, that retention adversely influenced the academic achievement of individuals. The latter finding is especially significant, since retention was supposedly

practiced in order to correct deficiencies in student achievement.[10]

Other researchers have supported Godfrey's conclusions. A 1968-69 examination of the experiences of first-graders in Kentucky public schools produced dramatic results. The experimenters, Paul Street and Terence Leigh, found that academically, a student who attempts first grade twice is not substantially better off than he or she was after completing it the first time. Street and Leigh found that ages at which students entered first grade exerted far more influence on academic achievement than did repetition, or non-repetition of the curriculum.[11]

Another investigation, conducted by A.J.H. Gaite on middle and high school students, supported the conclusions reached by Street and Leigh at the elementary level. Comparing data on which promotional decisions were to be made, Gaite found that most individuals did not significantly benefit from a second exposure to the curriculum. He discovered that some students did show a statistically significant gain in achievement in some subject areas, but that these areas invariably comprised a minority of the full curriculum repeated. The majority of those tested, Gaite demonstrated, showed lower performance during their repetition of course material. On the basis of this information, the experimenter questioned whether retention and repetition could be justified on the ground that they contributed to the achievement of a minority of students in a minority of the subjects studied.[12]

Other studies have focused on the full range of reasons for underachievement in the context of the promotion-retention debate. In an examination of the progress of male, elementary school children, Helen Reinherz and Carol Lee Griffin established that early retention

of students, occurring before the individual has completed the entire grade level, may have some benefit. Retention for repetition of entire levels, the experimenters cautioned, did little to increase academic development while it definitely imparted a social stigma. Reinherz and Griffin theorized that academic difficulties in elementary children might be due as much to lack of learning readiness on the part of the individual child as to any other factor. They suggested transitional or ungraded classes for individuals experiencing learning difficulties. Such arrangements, they noted, could accommodate the needs of students without forcing the drastic alterations entailed by the repetition of entire grade levels.[13]

Summaries of research efforts touching on repetition and retention shed additional light on the state of technical opinion concerning the worth of those practices. A comprehensive analysis of existing studies, carried out by the Philadelphia Public Schools, produced a number of conclusions. The editors of this survey suggested that grade repetition failed to help students academically and created a number of social problems. From the variety of special surveys they examined, the authors noted that the major problems of grade repetition centered around the fact that the student involved is older and larger than his or her classmates, although his or her rate of learning is generally below that of the class. The study suggested that retention and repetition may be linked to social problems. They claimed that the social difficulties inherent in the practices often contribute to the maladjustment of children. They emphasized that individuals who have already experienced a poor family life, failure at school may provoke resentment. The authors did not dispute that fact that certain minimum academic standards

must be established, but cautioned that an understanding of the social implications of such activities must be kept in mind.[14]

One of the most recent and comprehensive treatments of the range of available research concerning grade retention and repetition was assembled by Gregg B. Jackson in 1975. Jackson reviewed a thorough range of articles composed during the early twentieth century, examining the methodology and findings of each. His conclusions seem particularly well-researched.

Jackson suggested that a number of research designs have characterized investigations of retention and repetition. One of the most elementary types, he notes, compares the progress of individuals retained under normal school policies with that of individuals promoted under such policies. The investigator claimed that such analyses are generally biased toward grade promotion since the retained individuals inevitably have more difficulties than their counterparts; otherwise, the pupils would not have been retained. Jackson noted that another design compared the condition of retained students after their retention period with the condition of the students before the retention. This procedure does not analyze the relative influences of retention and promotion, since it only treats retained students. What is accomplished is an examination of the impact of retention on those retained. Still another design, which compares the progress of pupils with problems who have been experimentally assigned to either a promotion or retention group, can provide some sort of general analysis of the two procedures. Jackson attached considerable importance to this type of research.[15]

Within the research designs he examined, Jackson delineated the pattern of findings evident in each case. Not surprisingly, most comparisons of individuals retained with individuals promoted

demonstrated that the latter group progressed faster than did the former. No more earthshattering was conclusion that individuals retained for a single year seemed to have a better grasp of the subject matter at the end of the retention period than at the beginning of it. Data from the third type of design, that examining the progress of experimentally assigned groups, was difficult to analyze. In the first place, Jackson could find only three studies of this type. Even these analyses, he suggested, did not produce any striking conclusions since their results were not statistically significant. Jackson's major point was that no clearly reliable body of evidence exists to indicate that grade retention is more beneficial than grade promotion. The investigator added that " those educators who retain pupils in a grade do so without valid research evidence to indicate that such treatment will provide greater benefit to students with academic or adjustment difficulties than will promotion to the next grade.[16]

Jackson called for additional experimental research concerning retention and repetition. He pointed out that only through the use of research designs which minimized the influence of other variables, could the precise influence of the various practices be delineated.[17]

Available research related to grade retention and promotion thus produces a varied range of conclusions. Almost invariably, studies support the notion that the practices harm the mental-emotional development of children. All of this is perhaps all too simplistic. Childhood and adolescence are adjustment processes, characterized, more often than not, by the struggle of the individual to adapt to the plethora of changes occurring within him or herself. In this

context, the notion of the peer group is crucial, since, in friends and classmates, the student interacts with a group of people who are also going through adjustment processes. Since the school grading system places children of the same age together, pupils in the same grade are at similar stages of the growth process.

The effect of grade retention on this developmental process can, and is often a devastating one. By uprooting the individual from his or her social milieu, retention isolates the student from individuals going through similar adjustment phenomena. Beyond this, the student is placed into another group, composed of people who are at a different stage of development. The result is an environment which conflicts with, rather than supports, the individual in his or her struggle to adjust. The effects of this may not always be so drastic as that suggested in the review of literature carried out by the Philadelphia school system, yet the direction of these influences is clear. From a purely social standpoint, grade retention cannot be expected to produce desirable results.

The academic impact of the process is another important consideration since academic deficiency is probably the most important reason for the existence of grade retention. Here the research verdict is mixed. Studies of the ability of students before and after retention seem to indicate that some additional learning does take place during the retention period. This pattern, although perhaps initially striking, is not unexpected. One should not be surprised that an additional year of maturation and classroom exposure, no matter how great the frustrations and social difficulties involved, will produce some increase in skills and knowledge. The real issues here are why more learning has occurred and at what cost.

A delineation of those costs must be considered in determining the relative worth of grade repetition and retention. The emotional and social costs to the individual retained have already been discussed. The influence of this process on the group within which the person is retained should also be examined. Students do not repeat in a vacuum. The frustrations and difficulties which they encounter in completing a grade level a second time will effect the situation in their classes. It is difficult enough for a teacher to maintain order in a room full of individuals of the same age without the addition of a dissatisfied older students.[18]

Another important factor is the financial cost of grade retention. The expeneitures of a school district may be analyzed on a per pupil basis. In this context, repetition gives the district one year for the price of two.[19] All of the expenditures attached to each student are repeated during a second enrollment in a given level. If the individual concerned substantially benefits from the retention process, then these funds are well spent. Yet, can the expenditures be justified when the results are of questionable value?

Grade repetition and retention evolved because grades evolved. Within the rigid grade levels of the nineteenth century, there could be no piecemeal tinkering. Since grades were experienced and completed as units, grades would, of necessity, have to be recompleted as units. Subject repetition would not be possible because subjects had fused into grades within the public school curriculum.

The frustrations of educators over the failure to find successful strategies for remediating the severly learning disabled youngster has brought about the resurrection of the repetition and retention proponents. Defense of grade promotion is not enought for while the promotion practice seems to be plagued with fewer pitfalls than its counterparts, neither promotion nor retention answers the difficulties currently being experienced by our schools. New strategies need to be devised to cope with existing problems within the graded structure.

In middle and high school settings, these problems are perhaps more easily dealt with than in the elementary grades. Especially in New York State, where standardized Regents examinations gauge student progress, promotions can be handled on a subject-by-subject basis. Repetition may be implemented only in the subject where the deficiency occurrs.

Subject repetition has its pitfalls, yet the difficulties seem to be more limited than those inherent in grade retention. Remedial instruction tends to be localized with greater precision in individual subjects. The social problems of grade retention might be reduced by the fact that the mix of different levels of students in specific courses is often more pervasive at the middle and high school levels.[20]

Providing a productive form of repetition or retention at the elementary level is a more difficult process. Subjects are not taught on a separate basis and piecemeal repetition is not possible. In such cases the role of remedial education becomes paramount. Remedial instruction in specific areas can be carried out by trained classroom teachers or by district professionals.

In either case, the additional instruction is provided without wholesale alteration of the existing social environment. Repetition of skills and material should comprise an integral part of this process. The problem with graded repetition lies not in the repetition, but in carrying out the practice on a unitary, all-or-nothing basis. The best alternative to repetition is repetition, but within the context of existing grade levels.[21]

Other alternatives to grade retention also exist. Increased interaction between teachers and parents seems most desirable. With the aid of parents, educators can better pinpoint learning deficiencies at a time when such problems can be dealt with on a piecemeal basis. There is a need for more accountability within the public schools. As professionals, teachers should not feel reluctant to be held responsible for the quality of their efforts. Professional teachers must spend additional time and effort focusing on segments of their productivity which require it, even if such efforts require time spent beyound the regular school day.

Clearly, the concerns surrounding grade promotion and retention are important ones. It should be apparent by now that there are no simple solutions to these difficulties. Only constructive, well-considered efforts on the part of all concerned will produce meaningful results.

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